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EXOTIC BOTANY

ILLUSTRATED,

In THIRTY-FIVE FIGURES

OF

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CURIOUS and ELEGANT PLANTS:

EXPLAINING

The SEXUAL SYSTEM;

AND

Tending to give ſome NEW LIGHTS

INTO

The VEGETABLE PHILOSOPHY.

BY

JOHN HILL, M. D.

LONDON:

Printed at the Expence of the AUTHOR.

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To the RIGHT HONOURABLE

The EARL of NORTHUMBERLAND.

My Lord,

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IF repeated Obligations demand renew'd Acknowledgments, I ſhould be the moſt ungrateful of Mankind to omit this Opportunity of declaring how much I owe to Your Lordſhip's continued Favour; and with how little Title, beyond the mere Deſire not to be found wholly unworthy of it.

But there is another Source from which this Undertaking in a Manner claims the Protection of Your Lordſhip's moſt reſpected Name. The Plants which will be found its beſt Recommendation, are new in EUROPE: and ſeveral, indeed the greater Part of theſe, were firſt rais'd in this unfavourable Climate under Your Lordſhip's

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ſhip's immediate Care: they were the Produce of Your own Stoves, and Gardens.

Theſe, if their humble Rank allow'd Senſation, would glow with a new Luſtre when they reflected on their Origin: but what they cannot know, he feels, my Lord, moſt ſenſibly, who gives the World theſe their faint Repreſentations; and who can have no Pride ſo great as that of throwing himſelf with them, at Your Feet. To enjoy Your Lordſhip's Protection, is to claim upon a ſure Title, in ſome Degree at leaſt, that of the World: for all are ſenſible there is no Way of attaining Yours, but by endeavouring to deſerve it.

I have the Honour to be,

With the higheſt Reſpect and Gratitude,

My Lord,

Your Lordſhip's

Moſt Obedient,

And moſt Humble Servant,

St. *James's-Street.*
Jan. 18, 1759.

J. HILL.

EXOTIC BOTANY.

INTRODUCTION.

THE following Figures are engraved from Nature. Moſt of the Plants came over dried, as Specimens; and they were brought to the State wherein they are repreſented in theſe Deſigns, by Maceration in warm Water. The Method was this.

The Plant was laid in a China Diſh, and Water was poured upon it, nearly as much as the Cavity would hold; another Diſh, ſomewhat ſmaller, was turn'd down upon this, and the Edges were cemented with common Paſte ſpread upon brown Paper. This was ſet upon a Pot half full of cold Water, and placed over a gentle Fire. Thus after a little Time the lower Diſh heats; and the Water gradually in it: A few Minutes then complete the Buſineſs. The Plant, however, rumpled up in drying, expands and takes the natural Form it had when freſh. Even the minuteſt Parts appear diſtinctly.

The Specimen is deſtroyed by this Operation, but it ſhews itſelf, for the Time, in full Perfection: I could have wiſhed to ſave ſome of theſe, but they were ſacrificed to the Work; and I hope their Remembrance will live in the Deſigns.

This is the Hiſtory of the ASIATIC Plants: to which I have added ſome few others, that ſerved beſt to illuſtrate the Sexual Syſtem; and to ſhew the Courſe of Nature in conſtructing DOUBLE FLOWERS. Deſcriptions are not needed; for the Figures ſhew all the Parts diſtinctly; what theſe cannot expreſs, as the Height of the entire Plant, the Organs concealed within the Flowers, and the like, are added; with ſuch other Obſervations as appeared moſt curious or uſeful.

The Place whence I received each is ſet down: and this gives a general Direction as to the Degree of Expoſure the Plant will bear. I have not named that more particularly, becauſe it is not known. Experience will be the beſt Guide. There are many which we nurſe in Green-houſes, that would bear the open Borders.

The Seeds of theſe Plants came over with the Specimens; and they are now in the Ground, in four remote Parts of the Kingdom, where I have Correſpondence with thoſe who have Stoves, and have been moſt ſucceſsful in raiſing tender Species: many muſt be expected to fail; and ſome lye long in the Earth; but the preſent Seaſon has raiſed ſeveral of them, as will be ſeen in the ſucceeding Chapters.

In all theſe Places each Plant will be tried in the Stove, the Green-houſe, and the open Air. This Way we ſhall know what each will bear: and there is no other.

SCARLET

SCARLET COSTUS.

WHETHER every Plant of COSTUS aſſumes this glowing Colour, at a certain Period, I cannot ſay: this was from MADAGASCAR; and tho' ſeveral Flowers were perfect on it; and the Buds of many others had not yet opened, it was, except for a few light Traces of Green toward the Top, entirely Scarlet. The Snow-white of the Flowers upon this red Ground, give it a Character of conſummate Elegance; and there is Singularity enough about them to demand the Attention alſo of the Philoſopher.

The Stalk is round; jointed as a Reed, a Yard high, and of a ſhining Crimſon. The Leaves ſurround it at their Baſe, forming a filmy Scabbard; thence they run out to a conſiderable Length; waved at the Edge, ſupported by large Ribs; and pointed at the End. They were, in this Plant, of a high and pure Scarlet.

The Flowers are numerous, and moſt conſpicuous. Their Buds form together a vaſt Head, which ſeems compoſed of poliſh'd Coral. The Rudiment of a Seed Veſſel ſupports each Flower: There riſes from the Head of this a Cup divided into three deep, pointed Segments of a glowing Red on the outſide, and of a Violet Blue within. The vaſt Flower burſts from its Hollow, and is of an Ermine Whiteneſs; tender, delicate, and finely ſcented; and in Form different from all we know in EUROPE.

Three pointed Petals form the lower and the outer Part, and from the midſt of theſe riſes a Nectarium, or tubular Body; larger, and expanded at the Rim: within this there is yet another ſeeming Petal ſmaller, bent back upon it, and curled up again; and facing this a very narrow Part crowned with a yellow ſplit Button, all the reſt being White. This is the Figure of the Flower from Nature. The Style is ſingle and ſlender: The Seed Veſſel, which follows, is divided into three Parts, and holds many Seeds: The Root is tuberous, irregular, ſpungy, and white; almoſt inſipid, but with a light ſpicy Flavour.

The Fragrance of the Flower is delicate; and 'tis the Baſe alone that has it: the upper Part is ſcentleſs.

No Care would be too much to make this more familiar in our Collections; and in the native Soil 'tis very hardy: it loves a black moiſt Earth, and thrives beſt under Shade. The Roots parted at any Seaſon grow readily: The Flowers open at Night, and melt away under the next Day's Sun; but there is a long and large Succeſſion of them.

The modern Syſtem, invented by LINNÆUS, arranges Plants into Claſſes, according to the Number, Situation, and Proportion of the duſty Buttons in the Flower, which grow uſually upon ſlender Filaments, about the young Seed Veſſel. In this there is only one; the Plant is therefore of the firſt Claſs, the MONANDRIA. The Button is ſupported on a narrow Petal, inſtead of a Filament in this Flower; and 'tis the ſame in others of the Claſs, the CANNA is an Inſtance. We ſhall ſhew hereafter the Diſtinction between Filament and Petal is ſlight and vague: one eaſily enlarges to the other, and many double Flowers are formed by the ſwelling of their Filaments.

Coſtus Lin.
Coſtus Arabicus Authorum.

Scarlet Costus.

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Profuse Nyctanthes

PROFUSE NYCTANTHES.

THIS ſweet Nyctanthes, which, with us, ſtraggles along the bark Bed of a Stove, a weak, unſightly, and irregular Plant, graces the CHINESE Foreſts in a better Form. 'Tis there alſo a weak Shrub, but riſing among Thickets, it lays the ſlender Boughs upon their more robuſt Branches, and carries them to the Height of twelve or fourteen Feet; grac'd with innumerable Flowers, and with a glorious Verdure. With us the Leaves are often pale, for the free Air gives Colour, and our Stoves can but admit a moderate Share of it. There where it breathes its Perfumes to the Wind, the Leaves have alſo their complete and glowing Verdure. The Stalks are lightly hairy, and they divide wildly, but pleaſingly, with obtuſe Angles. The Leaves are firm in Subſtance, and deep ribb'd. The Flowers are Snow-white, and innumerable. More had fallen from this Speciмen than remain'd upon it, yet the Number was ſtill equal to thoſe here repreſented. It very well deſerves therefore the Character, PROFUSE OF BLOOM; and it may diſpute the Prize of Fragrance againſt all Vegetable Nature.

The Flowers ſtand in ſmall Cluſters at the Extremities of the Branches: each has its lacerated Cup, with eight narrow and ſharp-pointed Diviſions, which grow in Length after the Bloom is fallen. One Petal forms the Body of the Flower: This is a ſlender Tube, divided at the Edge naturally into no more than eight Segments, but no Flower grows more readily luxuriant. In this Specimen, gather'd in a Hedge, they were in general nine; and we ſhall ſee, in the ſucceeding Page, how Art can multiply them farther.

Each Segment riſes from the Head of the Tube, with a bearded Baſe, which wears off as they grow in Number and in Length; and is in all States moſt conſpicuous in the outermoſt Diviſions. Deep in the Hollow of the Tube lie two Filaments with their Buttons, and one Style riſes up between them, exceeding them greatly in Length. The two Filaments ſhew it to be of the ſecond Claſs, the DIANDRIA.

It will be worth while to examine this Flower ſtrictly, for the ſake of that which follows. I know no Subject more Curious than ſearching Nature in her Courſe of doubling Flowers: and this is at once a ſingular and very glorious Inſtance. In many others the Filaments ſwell into Petals, and the Doubleneſs begins from the Baſe of the Flower; in this the Luxuriance riſes from the Head of the Tube, and the two ſmall Filaments remain unalter'd at its Bottom. This Flower of nine Petals is an approach to Doubleneſs; and will lead toward the Knowledge of the other.

The Tube terminates in a thick, unequal, knobbed Circle: and from the outer Verge of this riſe the Eight proper Petals, but when it ſwells to more than the natural Thickneſs, others come up within theſe from different Parts of its Surface, forming the inner Circle. No more appears in this Condition of the Plant. It is thus a very valuable Article in our Collections: but in the fully Double State it exceeds all Price.

Nyctanthes foliis inferioribus cordatis Obtuſis ſuperioribus ovatis acutis.—Linn.
Jaſminum Arabicum Authorum.

ROSEATE NYCTANTHES.

THIS alſo I received from CHINA; not from their Fields, but Gardens: where they boaſt they can produce it from the other at their Pleaſure. If this be true, they exceed us in Gardening, as much as in ſome other of the Arts. Perhaps it is the firſt Shrub of the World for Elegance and Fragrance. The Stem is more robuſt than in the former, and does not equal two thirds of its Height: The Leaves are altogether alike, as is alſo the general Form of the Plant; but the Flowers differ in their Diſpoſition: there is only one upon each Footſtalk or Termination of the Branch, but they are numerous on the entire Shrub: their Form is not unlike that of a double Roſe; their Bigneſs juſt what is here repreſented: they are White in Colour, and they exceed in Fragrance even the ſingle Kind. The Doubleneſs ariſes from the original Rim of the Tube, and the two proper Filaments I found perfect in the Centre of ſeveral of the Flowers, with their complete Buttons. The Cup in ſome Degree partakes of the Nature of the Flower; its pointed Segments fall in filmy Pieces down the Footſtalk.

We are led one Step toward the Knowledge of DOUBLE FLOWERS and their Conſtruction, by this Shrub; for here alſo the multiplied Petals riſe from the knotted Subſtance, which forms the Rim of the Tube in the natural Flower: that becomes larger, more exuberant; and inſtead of ſending out one or two Rows of Petals, burſts into many.

If we could learn what Power in Nature occaſions this, we ſhould know how to imitate it in the Works of Art. 'Tis not rank Nouriſhment, like that from Dung, for this extends the entire Plant in Height and Bigneſs, which prevents, not favours the Production of DOUBLE FLOWERS. From the Tulip to this Shrub 'tis uſual that theſe are produced on ſhorter Plants than the ſingle. May it not be, that Nature, urged by ſome Accident in the general Courſe of Growth, opens ſooner into Flowers than otherwiſe, and ſo makes them double? The great Cauſe appears to me to be a proper Addition of rich, but not rank Nouriſhment.

In the common Courſe of Nature; a Plant at a certain Height, that is, at a certain Diſtance from the Root, produces Flowers; the Bark, inſtead of Leaves, then forming a Cup, and the inner Rind Petals. Now if rich Nouriſhment force the Plant to break into Flowers at a leſs Diſtance from the Root, more Food is carried to them, and more Petals are formed. The original Petal conſiſts of two Membranes, and a ſpungy Subſtance between them; in this Flower the innermoſt Skin is thrown off, and becomes an entire Petal, and the chill Air forms another Skin in its Place out of this ſpungy Part; this is afterwards thrown off as the firſt, and ſo a ſecond Series of Petals is formed; and by the ſame Proceſs afterwards are produced many more.

This is evidently the Formation of the DOUBLE FLOWER in the preſent Inſtance. Nor is any to wonder, that in the Place of four or five ſingle ones there comes upon each Footſtalk but one of theſe. We ſhall ſhew the ſame Change preſently in a common Plant, the NARCISSUS.

Linnæus gives no Names to DOUBLE FLOWERS; the Effect of Culture.

Roseate Nyctanthes.

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Tyger Ixia.

TYGER IXIA.

THIS I received from CHINA: it is alſo a Native of the AMERICAN Continent; but if they meant to figure it, who gave the firſt Accounts of a FLOS TIGRIDIS, they were very ill Deſigners. This deſerves all the Praiſe theirs had for Elegance; and will be a ſovereign Beauty in our Collections.

The Plant is ſeven Foot high: the Stalk is thick, firm, jointed, and tinged with Crimſon. The Leaves are long and flaggy, of a freſh Green, and firm by means of vaſt Ribs; they ſurround the Stalk at their Baſe; and are there Whitiſh within.

The Flowers ſpread from the Summit in a broad looſe Cluſter, extremely ſpecious, and not leſs ſingular: no Eye could miſs admiring them at a Diſtance, or being more charmed on a nearer View. Each has ſix Petals: theſe are placed in two Series, three in each. Thoſe of the outer Series are larger, but thoſe of the inner are more richly painted. LINNÆUS errs, who calls the ſix Petals of the IXIA equal: this Plant manifeſtly ſhews the contrary. The Colours are a delicate Yellow, and a full Crimſon, and they are thus diſpoſed upon the Flower. The three outer Petals are yellow from their Baſe to three fourths of their Length, and in all that Part they are ſpotted like the Tyger's Skin, with Crimſon; on their Points they have the the ſame Crimſon, but ſomewhat paler, throughout the whole Surface. This is the colouring of the inner Part of theſe Petals; the Outſide is Yellow, and the Crimſon Spots are only carried lightly along the Edges. The three inner Petals are more uniformly marked; they are Yellow throughout, and are all over ſpotted with this elegant Crimſon.

Three Filaments riſe from the Baſe of the Flower with yellow Buttons, themſelves of a fine Crimſon; and they ſurround a ſingle Style, whitiſh, and divided into three Parts at the Head, or Stigma. The Rudiment of the Seed Veſſel ſtands under the Flower, and is triangular, and filled with many Seeds.

The three Filaments very diſtinctly ſhew the Plant belongs to the TRIANDRIA, the third Claſs in the Sexual Syſtem.

Its natural Habitation is the deſart ſun-burnt Sand of the INDIES; and it thrives no where ſo well as in the Neighbourhood of the Sea; not on the Shore, but at half a Mile, or a Mile Diſtance. Its tuberous Roots lie deep beneath the Surface twelve or fifteen Inches, and it propagates itſelf ſo faſt, that there are Leagues of the Sand covered with it.

Our Gardeners ſhould regard this Particularity of Plants that love ſome Influence of the Sea Salt, tho' they do not grow upon the abſolute Shore. We have ſome Trefoils, and other ENGLISH Species, which have the ſame Quality; never being found on the Shore, nor ever far from it. The Influence of Sea Water reaches a great Way. A little Sea Sand in the Mould wherein theſe Plants are propagated, would anſwer the Purpoſe; and they would thrive much better, becauſe their Nouriſhment would be more natural.

Ixia foliis enſiformibus, floribus remotis. Linn.

AMETHYSTINE CALLICARPA.

WE add here an AMERICAN to our ASIATIC Treaſures; a Shrub whoſe Berries have an Elegance not met with elſewhere in the Vegetable World. Its Hardineſs is alſo a great Recommendation. We keep it in Green-houſes, but this cannot be neceſſary; a Native of NORTH AMERICA will certainly bear the free Air in our Climate.

It is a Shrub of moderate Height, with pliant Branches, and large handſome Leaves. The Flowers grow in a very ſingular Manner; like thoſe of what are called the Verticillate Plants: two Leaves riſe oppoſite, and from the Boſom of each Footſtalk grows a Tuft of Flowers, which, as they open, ſpread in an elegant Cluſter, ſurrounding the whole Stalk.

The Flowers are of a pale, but elegant Crimſon; they have a ſmall green Cup, and each is divided into four Segments, mimicking ſo many Petals, ſpread widely open. The Cup has alſo four Diviſions, but they are ſmall and plain.

Four long and ſlender Filaments riſe from the Bottom of each Flower, with oval Buttons; and they ſurround a ſingle Style fixed on the Rudiment of the future Berry.

Theſe Berries are the great Beauty of the Plant; they have a Delicacy and Elegance in Tinct and in Conſtruction, which attract every Eye. They cluſter round the Stalks at theſe Joints as the Flowers had done, and they are as big as ſmall Peaſe; round and extremely gloſſy. Their ripe Colour is a moſt delicate Purple, not deep, but ſhining, exactly that of ſome pale Amethyſts; and they appear covered inſtead of the tough Skin which inveſts our Berries, with a thin ſhelly, and as it were pearly Coat; upon whoſe Surface the Colour plays according to the Light, as in the Opal, or very fine Mother of Pearl: or as we imitate it in what are called the Changeable Silks. They have not the Aſpect of Berries, but of Pearls tinged naturally of this Amethyſtine Colour. Thoſe to whom I firſt ſhewed ſome of them, brought from the native Climate of the Shrub, took them for ſhelly, and not vegetable Subſtances. Mr. LEE has ſince ripened them here to the ſame Perfection. I gave a ſmall Shrub, with them perfect upon it, laſt Year, to my great Friend and Patron, the Patron of all uſeful Studies, the Lord NORTHUMBERLAND.

The four Filaments in each Flower ſhew it to be of the fourth Claſs in the Sexual Syſtem, the TETRANDRIA; and, like the preceding, having but one Style riſing from the Rudiment of the Fruit, it is of the firſt Order under that Claſs, the MONOGYNIA.

It has been called SPHONDYLOCOCCUS, and by our Gardeners, generally, JOHNSONIA. It grows freely from Cutings; and in the ſecond Year may be brought into its Place in our Plantations.

Callicarpa. Linn.

Amethystine Callicarpa

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Ermine Azalea.

ERMINE AZALEA.

THIS Hedge Shrub of the univerſal CHINESE Empire, excels all that we know in our Gardens. They introduce in their wild Works of Art alſo; and it carries an Everlaſting Bloom in the Front of thoſe ſtrange Rocks, with which they terminate their Views, or ſtartle the Stranger's Eye in their vaſt Gardens. There is a ſateny Softneſs in the Flower, unlike all the EUROPEAN kinds; and its conſiderable Size, and moſt extraordinary Painting, gives it new Characters of Beauty.

The Shrub is nine Foot high, and naturally grows in a looſe open manner, with diſtant Branches, which the Winds play with, in great Wantonneſs, and through which the freſh Air at all times breathes freely: to this perhaps is owing, in a great degree, the peculiar Luſtre of the Bloom. Our Gardeners know how eſſential this free Courſe of the Air is to the Perfection of Fruits: perhaps it is as requiſite to the full Beauty of Flowers. Mildews and Blights affect theſe tender Parts of Plants as well as the Fruit; and to render them fully glowing, it may be as needful to prevent the Occaſions of ſuch Accidents. Nature has done a great deal in this Plant, and we ſee the Conſequence: Art may try in others.

The Leaves of this AZALEA are of a delicate Green on the upper Part, and Whitiſh underneath. The Wood is firm and white, and the Bark brown. The Cups from which the Flowers riſe are ſoft and downy; cut into five Segments. The Flower itſelf is White, tinged on the Back with a deep Crimſon. The ſame Colour, only brighter, plays on the Edges; and on the Ermine Whiteneſs of the Body of the Petals it is again ſtamp'd in little Spots, as Art diſpoſes the black Tails of that Creature in making Habits of the Skins. One Petal forms the Flower, but it is deeply cut into five Parts, and within riſe five elegant and conſpicuous Filaments Crimſon, and crown'd with yellow Buttons. The Style is ſingle.

In the wild State it flowers twice in the Seaſon, and paints the Hedges Spring and Autumn. In Gardens it blooms throughout the Year; and never drops the Leaf. The CHINESE, who attend to the leaſt Circumſtances, in their Culture of Plants, manage this Shrub in a peculiar Way, to keep it always blooming. Every Evening they take off the decay'd Flowers with their Stalks. This prevents the ripening of Seeds; and conſequently more Flowers follow: as in our Domeſtic Fowls, if they be permitted to ſit, the laying ceaſes, but if the Eggs are removed that ſhould have afforded the young Brood, they lay on.

Thus every Morning there is a Succeſſion of Buds, which, when the Sun grows warm upon them, burſt at once into theſe noble Flowers: an elegant and wonderful Appearance.

The five Filaments ſhew this Shrub to be one of the PENTANDRIA, the fifth Claſs in the Sexual Syſtem.

The Flower varies amazingly under their Culture in regard to Colour, but they have not, ſo far as I learn, made any Advance towards Doubling it.

Azalea floribus ſubſolitariis, calycibus piloſis. Linn.

NOSEGAY PERIWINKLE.

WITH us this new Favourite makes an elegant Appearance; but ſo much inferior to the full Excellence it wears in CHINA, that unleſs I ſhould obſerve this Figure is from a Specimen ſent out of that Country, ſome half-inſtructed Botaniſt would ſay I had exceeded Nature. It has been thought, theſe Figures, in general, repreſent very elegant Plants of their ſeveral kinds; but I, and thoſe who ſaw the Specimens with me, muſt own they are very much below Nature; tho' they are as like her Works as I could make them.

When KÆMPFER brought into EUROPE the Specimens he had collected in JAPAN, the Plants HERMAN had raiſed, tho' from the Seeds of the ſame Shrubs, appear'd ſo unlike to them, that many, at the firſt Sight, thought the Species different: but theſe Variations went no farther than Colour, Number of Flowers, and the like Accidents; the eſſential Characters were altogether the ſame in thoſe collected healthy under their native Sky, and ſuch as the Stoves furniſhed; the Difference was in Beauty, nothing more. Perhaps the Seeds collected with theſe Specimens will yield Plants juſt as different, or juſt as much inferior to themſelves as thoſe of that Inſtance; but the Difference is ſlight: We ſee thus what the Plants are in their extreme Perfection; and if we would raiſe them to the ſame Beauty here, we muſt give them Air.

The Name by which I have called this Shrub is a Tranſlation of the CHINESE Term; they call it ſo becauſe each Sprig cover'd with its Cluſter of Flowers is a Noſegay.

The Shrub is four Foot high, and grows naturally with a pleaſing Irregularity. The Bark is tender, and the Wood not hard. The Flowers grow ten, twelve, or more together at the Summit of each Branch; and freſh Buds open as the firſt blown Flowers decay, ſo that the Noſegay is in part renewed daily, and yet ſeems Everlaſting.

This is one of the PENTANDRIA, the fifth Claſs: but its five Filaments are not conſpicuous; they are lodged in the Tube, and the Flower muſt be torn open to diſcover them. This Tube ſwells toward the Top, and there are five Prominences on its Surface; 'tis in this Part the five membranaceous Buttons are lodged. They form that Swelling, and theſe Prominences; and they ſurround the Embryo of the Fruit; a moſt ſingular Style fixed on the Rudiment of a double Pod.

The Shrub is Native of the EAST-INDIES, CHINA, and the CAPE of GOOD HOPE; and in all thoſe Places it is nurs'd alſo in Gardens: yet 'tis but within theſe few Years we have known it. Its Figure on the CHINA Skreens, and other japan'd Works always pleas'd the Eye, but it was ſuppos'd a mere Piece of Fiction. We once thought ſo of their vaſt Hibiſcus, but we know otherwiſe now; and we are in the Way to more Diſcoveries.

See Kæmpf. Amen. Exot. — Article Tſu Tſu —

Nosegay Periwinkle.

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Peloria

PELORIA.

I Add to the fifth Claſs a Plant, which 'tis a Cuſtom rather to place among the Monſters: but few have ſeen it. This Specimen I owe to the Favour of the Biſhop of PANTOPPIDAN, who gather'd it in NORWAY.

By Monſters, among Plants, Naturaliſts mean ſuch as have been produced by the Copulation of two diſtinct Kinds. 'Tis not impoſſible that the Organs of the ſome different Plants may be ſo nearly like to one another, that ſuch a Copulation may come within the Verge of rational Belief: but I have not yet ſeen any Inſtance of it in Nature: Neither do I know to what Plant they would refer for one Part of the Parentage of this, who fancy it a Mongrel; if it were allow'd, that the common LINARIA, which it muſt be acknowledg'd extremely to reſemble, were the other.

'Tis thought VERONICA and VERVAIN, have produc'd a Monſter, or a Mongrel Plant between them: Nor will I contradict the Opinion, ſince Negatives admit no Proof. All I can ſay is, that I have long cultivated the two Plants in the ſame Border, and near one another, but no middle kind has yet appear'd. 'Tis not impoſſible there may hereafter: or that which fails with me, may have ſucceeded with another.

The PELORIA has a general Reſemblance, in its Aſpect, of the TOAD-FLAX; but the Flower is altogether different. Even the Claſs is different: nor is the Plant if I may judge from a ſingle Specimen, ſo very like this TOAD-FLAX as has been ſaid.

From a long ſlender woody Root there roſe in this three Stalks; purpliſh, weak, and bent; whereas our LINARIA is uſually robuſt and upright. The Leaves were long and narrow, but they had blunter Ends than in the common TOAD-FLAX, and they were paler. The Flowers crown'd the Top of each Stalk in a handſome Spike. They are large, oblong, yellow, and in Conſtruction wholly unlike not the LINARIA alone, but thoſe of any other Plant whatever. The Mouth is regularly open'd, and the Tube is long and ſwell'd: at its Baſe there are four Horns or Spurs form'd of the ſame Subſtance with the Flower, and hollow. Within there are five regular and perfect Filaments unlike entirely thoſe of the LINARIA, and indeed of every thing elſe known. The Rudiment of a Seed Veſſel was alſo perfect in many of the Flowers, and there were ſome unripe Seeds.

I have ſown theſe, tho' without much Hope, becauſe they were plainly immature: if they ſhoot we ſhall have Opportunities of knowing ſomething more of the Plant than we do at preſent; or if theſe fail, it will ſoon be in the Upſal Garden; where a Root was ſome Years ſince ſet, but at an ill Seaſon, and without Succeſs.

Perhaps the Proof of its being or not being a mixt Production, may be refer'd to the Succeſs of fairly ripen'd Seeds. If theſe produce their like, it will give a ſevere Shock to the receiv'd Opinion. Mules produc'd from the Horſe and Aſs do not propagate: and probably a Law ſo univerſal in the Animal Creation is not broken in the Vegetable.

Peloria. Linn.

JACOBÆAN AMARYLLIS.

WE receiv'd firſt from SOUTH AMERICA this Pride and Glory of the bulbous Claſs. Mine, though of ASIATIC Origin, differ'd in nothing from the uſual Plant, except that the Leaves were ſomewhat narrower, and of a leſs firm Subſtance. I need not recommend it to the World. The Hexandrous Claſs comprizes moſt of the bulbous Plants; and they are generally crown'd with ſpecious Flowers: This has enjoy'd the firſt Praiſe hitherto; and Fancy is the only Judge, whether or not the next excels it.

The Leaves are fleſhy, but not firm: The Stalk is thick; and what is very ſingular, 'tis often white, or tranſparent toward the Ground, though it gives Nouriſhment to this high-colour'd Flower. The Change which gives that glowing Colour is made higher.

The Flower burſts from a filmy Scabbard; and with its Weight often bends the Stalk. The Diſpoſition of the Petals, one upright, two ſideways, and three downward, is regular and eſſential in the Plant: and the bending of the lower Petals, by which they embrace the Filaments towards the Bottom, is yet more ſingular.

The ſix Filaments diſcover the Plant to be of this hexandrous Claſs; the ſixth in order in the Sexual Syſtem: and the Character of that Claſs cannot be more ſtrongly mark'd in any Flower. The ANTHERA, or Buttons, which crown the Filaments, are at firſt long and white; afterwards ſhorter and yellow. It is a Change frequent in the Anthera of other Flowers; but here they are ſo large that 'tis eaſy to ſee how it is brought about. The Plant will flower upon a Shelf, and it may therefore be familiarly obſerv'd.

The Anthera at their firſt Appearance are furrow'd lengthwiſe, and are white. Each is compos'd of two Tubes join'd on their inner Part; and each has a Groove outward along the Middle. If an Anthera be cut tranſverſely, theſe two Tubes are plainly ſeen; and they are fill'd with a yellow Powder, the Farina. After a Time they burſt: the Opening begins at one End of each Tube, and in the Groove. As they ſplit farther up, the two Sides turn back, and the Tubes contract themſelves, and become ſhorter. This makes their change of Shape: the yellow Colour is owing to the Farina covering them.

The other Parts of Impregnation are as conſpicuous in this vaſt Flower. The Stigma or Top of the Style is cover'd with cryſtalline Clubs, and open Tubes, and is always wet with a glutinous clear Humour, ſerving to detain and burſt the Grains of Farina.

There are alſo ſix Nectaria in the Baſe of the Flower, of a very curious and peculiar Structure, ſolid at their Bottom, and branch'd upwards in the manner of white Coral.

Theſe Parts I firſt obſerv'd in that Species Amaryllis, figur'd in a ſmall Work, entitled, OUTLINES OF VEGETABLE GENERATION, publiſh'd a few Months ſince. LINNÆUS overlook'd them. I am happy to find them alſo in this Plant, which is a Species of the ſame Gems: different Obſervations thus confirm each other.

Amariyllis Spatha uniflora, corolla inæquali genitalibus declinatis. Linn. Jacobæan Lilly vulgo.

Iacobæan Amaryllis.

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Delicate Amaryllis.

DELICATE AMARYLLIS.

THE former Species, obtain'd from LINNÆUS, by its uncommon Luſtre, the Epithet of FORMOSISSIMA: MOST BEAUTIFUL: perhaps this will make the Title doubtful. Its Profuſion in the entire Cluſter is a great Glory; and the more elegant, though fainter Colour, entitles it well to the Addition DELICATE. At times it has flower'd in the EUROPEAN Stoves: but this has been ſo ſeldom, and with ſo much Variation, from the more or leſs advantageous Management, that they who poſſeſs'd the ſeveral Plants doubted whether or not they were the ſame Species; and the good HEISTER lately thought it ſo glorious and ſo wonderful a Sight, that when it burſt for Flower, he wrote upon the Garden Gates an Invitation to ſuperior Beings, to come down and look upon it. He thought the Plant that flower'd with him different from what had been deſcrib'd by others, but 'twas only that it blow'd leſs perfectly. This is the Aſpect of the Cluſter in Perfection, as it flower'd in CHINA, though 'tis otherwiſe the ſame with his; as his own Root and Leaves here figur'd alſo ſhew.

The Stalk is robuſt, upright, and crown'd at firſt with a vaſt ſingle Bud, conſiſting of many Flowers in a kind of Scabbard. When this burſts they throw themſelves naturally into a rounded Form, and play in various Elevations; their Colour, which is pale at firſt, grows ſtronger as they ſtand, and the whole Cluſter remains a long time in Perfection. The Flower has nothing of that Singularity which is ſo conſpicuous in the preceding Species; but it is not altogether regular, the Petals not being all of equal Length.

The Characters of the ſixth Claſs, the Hexandria, are as conſpicuous and evident in this as in the laſt named Species; and theſe bulbous Plants very happily ſhew that Diſtinction, which, though as certain in all others, is often obſcur'd by the Smallneſs of the Parts, or by their Situation in the Depth of the Flower.

There is ſomething that deſerves Notice in the Scabbard of this Plant; the filmy Subſtance, which performs the Office of a Cup, and holds the young Flowers, 'till they are ripe for burſting: tho' the Materials of this, and the Form, properly ſpeaking, are the ſame as in the other Kind, yet the Bigneſs in this makes a ſtriking Difference, and it is more durable, and is not wholly diſtitute of Colour. It is perhaps the moſt Elegant of its Kind; and is the next Thing in Degree to the Cup in the Hæmanthus, which the Incurious ſuppoſe a Flower. The Term Scabbard, Spatha, is given to this kind of filmy Subſtance, ſupplying the Place and Office of a Cup; but there is alſo another apparent Particularity in this Plant, thoſe crimſon Threads which lie among the Footſtalks of the Flowers riſing from the ſame Baſe. All who ſaw them wonder'd: but 'tis their Colour only which is particular. They are of the Nature of thoſe Films call'd Stipulæ in other Plants, and there are the ſame Subſtances exactly, only White in every common many-flower'd Narciſſus.

Amaryllis Spatha multiflora corollis inæqualibus foliis linguiformibus. Linn.

DOUBLE ORIFLAMME.

ORiflamme is a Name given, long ſince, to a ſpecious ſingle Tulip, from its Colours which were ſuppoſed to imitate thoſe of the antient ſacred Banner of the FRENCH; whoſe Tints were Blood and Gold. I do not know, that before this Year, it has been ſeen double. This was the happy Effect of a regulated Culture: it was rais'd in ENGLAND, and is added to the Plants of this Collection, not alone for its Beauty, but becauſe it will ſerve very happily to explain the Courſe of Nature in doubling the Bulbous rooted, Hexandrous Flowers.

The Leaves, the Root, and the whole Aſpect of the Plant are the ſame with thoſe of the ſingle Tulip from which it ſprings; but the Stalk is ſhorter. This confirms the Opinion advanc'd before in ſpeaking of the Roſeate Nyctanthes, that the Force of Nature burſting into Bloom, at a leſs Growth in Height than uſual, favours the Doubleneſs of Flowers: more Petals being form'd, becauſe there is more Nouriſhment ſent thither.

In this Plate we ſee the ſingle and the double Flower together, and as the Parts are all large and conſpicuous, we ſhall trace without great Difficulty how the Change is made. Double Tulips have hitherto been ſlighted, becauſe they were irregularly doubled, and roſe as Chance directed: this will perhaps bring them into repute, and the Gardener may have them thus regularly double, if he will follow the Method of a proper Culture.

The ſingle Tulip conſiſts of three Parts: the Petals or Leaves which are ſix, the Filaments with their Buttons alſo ſix, and a ſingle Rudiment of a Seed-veſſel. Theſe are conſpicuous in the ſingle Flower; in the Double the ſix outer Petals, and the Rudiment of the Seed-veſſel remain unalter'd, therefore the Change is not made from them: but the ſix Filaments are loſt entirely. Therefore Reaſon ſays the additional Petals are made out of the Filaments: and this Experience confirms.

The Doubleneſs of a Tulip will be favoured by this Culture. When the ſingle Tulip is in the Bud, juſt before it would have open'd, cut it down. Water the Root ſlightly, Morning and Evening, and at the uſual Seaſon take it up. Plant it again with Marle in the Mould, and the next Year uſe the ſame Caution, many may be thus manag'd at once, for a few only will come double, as is the Caſe in Anemones and many other Flowers. Of theſe ſuch only as ſhew a Tendency to Doubleneſs the ſecond Year, are to be treated thus, the following, and ſo on for the ſucceeding Seaſons. This firſt Tendency to Doubleneſs, is to be ſeen in the Filaments, they grow broader and more flat.

After this, it comes on thus: the Filaments grow broader and ſplit like Forks, the Button ſtanding in the Middle of the Diviſion: then, in the ſucceeding Years, the new Petals grow broader, and the Points wear off; at Length the Rudiment of the Button alſo fades away, and there are then ſix new Petals like the ſix firſt: after this, each ſplits flatwiſe into two, and they become twelve, ſo that the Flower conſiſts of eighteen Petals with no Remains of Buttons. This is the perfect double Tulip.

Double Oriflamme.

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Sanguineous Colchicum.

SANGUINEOUS COLCHICUM.

WE are accuſtom'd to the Colchicum in great Variety; ſingle and double, ſtrip'd as the Tulip, and teſſelated as the Fritillary: but this will not be the leſs welcome. The Vaſtneſs of the Flower, and the Contraſt of Colours, the perfect Blood upon the perfect Ermine, tho' it be laid on with leſs Regularity, will recommend it.

In Autumn, there riſe, uncover'd from the Ground, three Flowers, or more in a Cluſter, accompany'd by no Leaves, ſupported by no Stalk, but naked and defenceleſs. The Root below, is an oblong Bulb, coated with a thick Cheſnut-ſkin. At the Height of an Inch from the Ground, each Bud opens into a Flower, equally delicate and magnificent, form'd of eighteen Petals, long, wav'd and pointed: the Ground-colour is white, and the Spots are a bloody Crimſon.

Nothing more is ſeen, unleſs by opening the Ground. Then we perceive theſe Flowers riſe from the Centre of certain young Leaves which have been cover'd with them by a Scabbard, yellowiſh, rib'd, and dy'd with the ſame Purple. This Scabbard is the outer Skin of the Bulb, next within the brown Coat; only growing thinner as it riſes. Within it, is another very delicate Membrane, and then the Leaves, perfect at their Tops; but convoluted, and leſs diſtinct as they are traced downwards. They encloſe all the Way the Tubes of the ſeveral Flowers, which are white and hollow.

The ſingle Colchicum has ſix Filaments and a Style: the Filaments are in this double Flower obliterated; they form the inner Petals as in the double Tulip, but the Style remains. It is continued down to the Root, in three diſtinct Bodies.

Deep in the Centre lies the Rudiment of the Seed-veſſel, almoſt cloſe upon the Head of the Root, regularly form'd, tho' very minute, and with all its Diviſions. This grows and riſes afterwards with the young Leaves about it, and in the ſucceeding Spring, pierces the Surface and ripens a large Seed-veſſel with no apparent previous Flower; that having blown in Autumn. A ſingular and great Proviſion of Nature for the Seeds.

The ſix Filaments ſhew this to be one of the Hexandria, the ſixth Claſs in the ſexual Syſtem: but when we recollect the Flower, the Root, the Leaves, and all the Parts of the true Saffron, and ſee that, becauſe the Filaments in that are only three, it becomes one of the Triandria, and is ſeparated from this Colchicum, and coupled with the Ixia, this ſhews the ſexual Syſtem, tho' uſeful, is not natural. Whenever a true natural Method ſhall be eſtabliſh'd, the Colchicum and Crocus will be plac'd together. They agree in the Roots, Leaves, and Flowers, for tho' the Leaves of Colchicum are broad, and thoſe of Crocus narrow, both are graſſy. They are alike in the Eſſentials, and differ only in theſe leſſer Characters.

This Flower was rais'd from Seed ſav'd from the common Colchicum, gather'd from the wild Plant in a Meadow near CALNE in WILTSHIRE.

IMPE-

Colchicum flore pleno auctorum.

IMPERIAL GLORIOSA.

THE Tulip was conſider'd before this Flower, the Doubleneſs of which has in it ſomething moſt extraordinary, becauſe it will explain how Nature has performed the Wonder. The waved Edges, and the inverted Situation of the Petals in this, are all it has in Reality ſo ſingular: Theſe are from Nature, for in the ſingle State of the Plant they have the ſame curl'd and bent Aſpect. The reſt is owing to a ſimple Proceſs: the Doubleneſs is formed juſt as in the Tulip, but it is not quite ſo perfect. There the Buttons are entirely loſt, here there remain ſome Veſtiges of them; and tho' but lightly, they deform the Flower. We ſee a Thouſand double Tulips in the ſame State of Imperfection, for one that is like that, repreſented in our Plate; and on the ſame Principle, in the Gardens of CHINA, doubtleſs a perfect Glorioſa might have been found: but the Gentleman who collected for me, could not have the ſame Advantages as if he had undertaken the friendly Taſk in EUROPE.

Tho' double, it produces Seeds: For the Rudiment of the Seed-veſſel continues unhurt; and it is poſſible theſe Remains of Antheræ, or the more perfect ones, in ſingle Flowers, near the Plant, may impregnate them.

We have been accuſtom'd to receive this Species with ſingle Flowers from the EAST INDIES, I have not heard of it double before this Specimen, but in any State it is a Plant of vaſt Singularity and Elegance. It climbs among the Buſhes or winds itſelf round Trees. Nature has furniſhed few ſo well for ſupporting themſelves; for beſides that the ſingle Stalk twiſts itſelf naturally as our Hops round about whatever is near it, the Leaves all terminate in fine long twiſted Points, a Kind of Tendrils that lay hold alſo on every thing near them.

Thus the Glorioſa, in the ſingle State, covers whole Thickets, ſpreading over their Tops and falling down again every where before and among the Branches. In that State, the Flower is made of ſix Petals, as the Tulip, and there riſe from the Baſe of it ſix Filaments. In this peculiar Form of Doubleneſs, the Filaments have become broad and form'd themſelves into other Petals; and afterwards have ſplit flatwiſe as in that Flower when fully double; and this in the ſame Manner has Eighteen of them.

The CHINESE boaſt they produce this Change by Art; and without Exception they are good Gardeners: but probably the firſt came from Nature. We ſee double Ranunculus's and Anemones riſe from Seed with the ſingle, and double Tulips, appear in thoſe Beds where only ſingle ones were planted. Nature does ſomething in this which does not fall under the Examination of our Senſes, but we ſee the Effect. Probably they who in *China* ſaw the firſt Tendency to Doubleneſs in a Glorioſa, gave the Plant a more careful Culture. If they have an abſolute Art beyond this, it is one we ſhould be very happy to acquire.

This, as the Plants with double Flowers in the preceding Inſtances, is lower than the ſingle Kind, it winds among their Rocks, but five Feet is its uſual Height, the Root is tuberous.

M E-

Glorioſa Lin. Superb Lilly vulgo.

Imperial Gloriosa.

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Matamorphoses of Narciſsi.

METAMORPHOSES of the NARCISSI.

HOWEVER ſingular it might appear, that purple Threads crept about like Worms among the Foot-ſtalks of the Amaryllis; or that from the Cluſter of the profuſe Nyctanthes roſe, one double Flower; this Inſtance, by a familiar Example, ſhews, that our Wonder, at one Object, is often owing to our Inattention to others: and that what appears moſt ſtrange in foreign Flowers, or foreign Transformations, is found familiarly, tho' leſs conſpicuouſly in thoſe of our own growth; and is tranſacted daily in our Gardens. The ſingle Narciſſus, here figured, has the ſame Kind of Threads, only white; and there is the Transformation made twice over.

From the Seeds of the common ſingle Narciſſus of our Country Gardens, roſe the Plant number'd 1. in the preſent Plate, and from its Seeds which ripend in Perfection, was produc'd the other, of which there are two Views; and which, though rais'd thus from our own Seeds, is called Oriental.

The common wild Narciſſus, too mean a Plant, and too well known to need a Figure here, bears on the Summit of its weak Stalk, one large Flower. The two Parts of which, called the NECTARIUM or the Cup, and Petals, are both of the ſame Yellow. We have other common Narciſſus's which produce many Flowers upon one Stalk: theſe are altogether different: The Cup being naturally of one Colour, and the Petals of another; but the ſingle flowered Kind is always uniform in Tinct.

The Plant 1. raiſed from the Seeds of that Kind, produced Flowers in a Luxuriance unknown to the Species in its natural State, yet preſerving their Character: Three grew upon one Stalk, with thoſe fine Stipulæ between them; but the Cup and Petals were as in the original Plant of one Colour.

The Seeds of this Plant 1. produced the other, 2. and here the Flowers again, inſtead of three, were only one upon each Stalk; but vaſtly large and delicately doubled. The Leaves differ'd alſo, for they were ſhorter in the double Flower, and the Stalk was lower. We ſee therefore, to bear one or many Flowers upon a Stalk, tho' it has been eſteemed a Mark of great Diſtinction, may be the Character of a mere Variety; and we are led by this toward believing the boldeſt Thing that ever was ſaid of Varieties, LINNÆUS's Reduction of the Primroſe and Cowſlip to one Species; the Oxlip being a middle Stage between them.

The Manner in which the Doubleneſs is produc'd in this Plant, is different make all the others which have been named; for the Structure of the Flower is alſo different. We have ſeen the Filaments produce the Doubleneſs of the Tulip, Colchicum, and ſuperb Lilly, all of this Claſs; and here they aſſiſt in the Change: but there is alſo a peculiar Part, the Nectarium in the ſingle Flower. This is naturally indented at the Edges; and in the double Flower it forms many of the inner Petals. Thoſe Indentings are carry'd down to the Baſe, and make ſo many diſtinct Parts; and the reſt of the Addition is made from the Filaments, which, juſt as in the Tulip, ſpread into Breadth and ſplit flatwiſe, each forming two or more Petals.

The Change from a ſingle Flower to a Cluſter together, is not peculiar to the Garden in theſe Inſtances, or to the ſingle field Plant we have nam'd; the SOLOMON'S SEAL, in our Woods, has ſometimes ſingle, ſometimes cluſter'd Flowers, from each Joint of the Stalk; and ſo have many others.

R H U-

RHUBARB.

WE received many Plants under the Name of Rhubarb into our Gardens, for Men were curious to know, to what Species that ineſtimable Root belonged. They often were deceived, for thoſe were ignorant who undertook to gather it; but among many Errors, 'tis plain enough there came alſo Truth. This Specimen was from the North of CHINA, wild upon the Hills, where a great deal of Rhubarb is taken up for Commerce. I received it from one too careful to make Miſtakes; and who had Opportunities of knowing. The Seeds came with it, and the Plants which riſe from them, I think, will ſhew, that the Species, now called Rhubarb, in our beſt Gardens, is ſo. The Difference between that and the preſent Figure, is no more than would naturally riſe from Culture, and a different Climate.

Altho' the Flowers are trifling, there is ſufficient Beauty in the Whole. The Leaves have a bold and elegant Wave upon their Edges; and the Stature of the Plant, together with their Diſpoſition, the colouring of the Stalk, and frequent Purple of the Ribs in the lower Leaves, make it extreamly well worth Culture; eſpecially as it requires little Care, and lives in full Expoſure.

The Plant is a Yard high, and its Cluſter of Leaves even without a Stalk, have ſufficient Elegance. The Flowers are pale, they have no Cup, and one ſmall Petal forms them; cloſe at the Baſe, and cut into ſix Segments.

They err'd who plac'd it with the Docks; though its Flowers, Seeds, and whole Habit, naturally might have juſtified the Miſtake in Times when the preſent Diſtinctions of Plants were not ſufficiently known. The certain Characters of the ſexual Syſtem plainly ſeparate it. Perhaps a natural Method will ſome Time change the Face of Things again. The Filaments in the Flower are nine, and this invariably, according to the Laws of the preſent Syſtem, place it in the ninth Claſs, the Enneandria. As the laſt named Species were referr'd to the Hexandria for their ſix Filaments, the Plants of the two intermediate Claſſes, the Heptandria and Octandria, are character'd by Seven and by Eight: the preſent has its Place in the ſucceeding Diviſion for its Number; and differs from the Dock-kinds, whoſe exterior Form it wears, becauſe they have but ſix. Yet it agrees in other Characters, nearly related to this Claſſic-mark, with thoſe reſembling Plants. The Heads of the Styles are three, as in the Docks; and tho' the neceſſary Diſtribution of Linnæus ſeparates it three Claſſes, yet the Advance, from ſix to nine Filaments, being but a regular or proportional Gradation, perhaps Nature does not allow ſo vaſt a Diſtance of theſe Genera.

When we ſhall be able to attain a truly natural Order for Plants, probably this, and the Dock, which riſe by a third in Number of theſe Parts, over one ather, will be brought together; as the Crocus and the Colchicum before-nam'd, whoſe Proportion of the Parts is double. Something there is in Nature, which authorizes this Opinion: and how ſtrange ſoever it might ſeem to a young Botaniſt, there is much more Difference between two Plants with ſix and with ſeven Filaments, than between thoſe which have ſix and nine, or three and ſix, theſe being proportional Variations; the other abſolute Differences.

POIN-

Rheum Foliis Subvilloſis Petiolis Æqualibus. Lin.

Rhubarb

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To the Right Honourable
The Earl of NORTHUMBERLAND, *Patron of Science,*
This figure of the Poinciana *which flowerd at Sion House*
is Dedicated
by D.r J.s Hill.

POINCIANA.

THERE needs no Epithet of Diſtinction with this Name, ſince it is the only Plant of its Kind; and unlike every Thing beſide in Nature. Theſe are a Collection of vegetable Beauties, and it is hard to ſay, which of them demands Preference: but this is certainly inferior to none.

We have heard of it from the EAST-INDIES, and in the WEST-INDIA Iſlands: and Seeds ſent thence have produced often Plants in our Stoves, but they have not flower'd; they rarely made the Attempt, and when they ſhew'd Bud, they periſh'd in the Effort. This flower'd in the Year 1758, at SION HOUSE, under the Eye of Lord NORTHUMBERLAND, whoſe Stoves are better proportion'd for this Service, than any I have ſeen; and who has been ſo happy in his Attention to this Science, as to enrich EUROPE with more new Plants than could have been expected in the Time, and in the preſent State of BOTANY; ſo much having been attempted every where.

Laſt Year it flower'd in ſuch Perfection, as this Figure repreſents, and made an Effort to ripen one Seed-veſſel. 'Tis now in the full Bud again, and having more Strength at the Root, will probably accompliſh it. I do not deſpair of ſeeing the ſame Hand that rais'd the Plant to flower in BRITAIN, produce from Seeds ripen'd here a new Succeſſion.

This was from CHINA Seed, and there appear'd ſome Difference in the Plant, but the eſſential Characters are all the ſame; and the Variation is no more than accidental.

No Plant declares its Claſs more evidently than the Poinciana. 'Tis counted in the Filaments; and theſe are wonderfully long and diſtinct: if all Plants ſhew'd them thus, nothing would be ſo eaſy as the ſexual Syſtem. They are ten, and the Claſs is therefore the DECANDRIA, the Tenth in the Linnæum Method.

Every thing conſpires to Beauty in this Plant; the Leaves are elegant in Form and Colour; and the Diſpoſition of the Flowers in a long, looſe Spike, ſufficiently near to make one Body, and yet ſeparate enough to ſhew each diſtinctly. The very Cups, as the Flower opens, became colour'd, and make a Part of it; nor is any Thing more elegant than the Manner wherein thoſe long and mumerous Filaments are lodged within the Bud till the Flower opens. A fifth Petal in the Flower, and a fifth Leaf of the Cup, different in Form and colouring. From the others, add to the Singularity and graceful Wildneſs of the Whole; and the Colour is in the higheſt Degree rich and glowing. Art imitates it poorly. The Filaments in particular are as diſtinguiſhable for Colour as for Form: the Crimſon of theſe is ill imitated by our beſt Tincts. The Form of ſuch a Cluſter, crown'd with their Antheræ, ſtruck all who ſaw the Plant in earlier Times of BOTANY, and they nam'd it PEACOCK's CREST from the imagin'd Reſemblance.

SNOWY

Poinciana Linnæus. Criſta Pavonis Anthorum.

SNOWY MESPILUS.

THE common Hawthorn of our Hedges would be allowed a Shrub of Elegance, were not the Eye tired with its Familiarity: that is a MESPILUS according to the received Diſtinctions, and this Native of our *North-America* another; exceeding by many Degrees that Beauty we have allowed the common Kind. The Lord NORTHUMBERLAND, whoſe honoured Name I have ſo frequent Cauſe to mention in the preſent Work, gave this among the Reſt to the *European* Botany. His Lordſhip raiſed the Shrub from the Fruit ſent from *New York*, and it has now ſtood ſome Years the common Plantation in his Garden; flowering in vaſt Profuſion every Summer. Thoſe who have ſeen the fair Shrub in this State, will not aſk why I call it Snowy: the pure White of the ſtreaming Spikes of Flowers, which hang from all its Branches, give full Cauſe: and there is ſomthing in the ſtarry Diſpoſition, and wav'd Form of the Petals, which calls to Mind the falling Snow in a particular Manner.

It is a Shrub of Ten Feet high; thick ſet with elegant green Leaves, indented with a wonderful Regularity at their Edges: and the deep ſhining Bark is no ſmall additional Grace. The Characters of the MESPILUS are ſtrongly and particularly inſcribed upon the Flower; altho' the Length and Waving of the Petals, the firſt obvious Marks, appear very ſingular. The Cup has five Diviſions; and the Petals anſwer to the LINNÆAN Character in Number, for they are five, but by no Means in Form. Subrotunda et concava, roundiſh and hollowed, was an Expreſſion very proper in deſcribing the Petals of the common Kind, but by no Means applicable to theſe, which are oblong and undulated. The generical Characters do not reſt upon ſuch ſlight Diſtinctions; and we may ſee by this 'tis better not to admit them, for they ſubject the Characteriſticks to Uncertainty. One is enough that is fixed and invariable, and the Dependence ſhould be alone on that.

The numerous Filaments are inſerted into the Cup, and this declares the Claſs of the Plant to be the ICOSANDRIA. They are too many for any of the Claſſes eſtabliſhed by the Number of theſe Parts; and they are regularly proportioned: therefore the Place of their Inſertion alone determines it.

This Shrub may be made a very agreeable Article in Clumps and ſmall Plantations, but as the Value of it will depend upon the freſh Green of the Leaves and the pure Colour of the Flowers, it muſt have a free Air; and be kept from the Shade of larger Trees. In this Caſe the Leaves will retain their Verdure in full Perfection; and the Flowers, tho' they do not hold upon the Boughs quite ſo long, will have much more Beauty; for Shade turns them yellowiſh ſoon after they are opened, and without a free Courſe of the Air the Leaves on the lower Part of the Plant ſoon wither. It would be ridiculous to trim it up to a Head; for one great Article of its Beauty is the wild Freedom of its Growth, and natural pendent Poſition of its Flowers among the looſe and diſtant Branches.

SUN-

Snowy Mespilus.

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Sun Bright. Mesembryanthemum.

SUN-BRIGHT MESEMBRYANTHEMUM.

IF Singularity or Elegance alone can recommend a Plant to Notice, none can diſpute the double Claim of this; for it has both. The untutor'd AFRICAN admires it in his Deſart: and the more we have Knowledge, the greater we muſt own its Claim to that Diſtinction. Its general Form, the Manner of its Growth, the Peculiarity of its Leaves; and above all, its glowing Flowers command our Eſtimation. One farther Claim it has to our Regard: tho' a Native of very ſultry Regions, it bears the chill Air of EUROPE, better than moſt Plants from the ſame burning Quarter. There is never more Need of Shelter, than a Green-houſe will afford; and with good Management, it will live many Months in a common Border.

The Stalks have little Strength or Firmneſs: they naturally throw themſelves every Way upon the Ground, and the Plant forms a Kind of circular Tuft wherein the green and fleſhy Leaves make a pleaſing Variety with the Crimſon Stalks, before the Flowers diſcloſe their ſuperior Beauty. The Leaves are thick and juicy, almoſt rounded in the Circumference, and ſharp at the Point. They are green all the Year; and as the ſtraggling Branches hang from the rough Rocks, or cover the burnt Sands, they cannot but command that univerſal Attention which is paid them. With us a ſmall Pot of Earth feeds the Plant, and they fall over its Edges very beautifully.

This Flower leads us a Step more forward, in the ſexual Syſtem, than we have hitherto advanced: thoſe we have nam'd already, ſhewed the Character of their ſeveral Claſſes, ſolely in the Number of their Filaments, the Claſs being named thence; and this Diſtinction holds as far as twelve. Thoſe which have twelve Filaments, being Dodecandria. The laſt Plant was of the Decandrous Tribe, and Nature offers not one Plant, whoſe Filaments are eleven: at leaſt, none ſuch has yet been diſcover'd.

After twelve we do not count the Number: but are guided by the Arrangement of the Filaments, their Proportion, or their Place of Inſertion.

Here we enter on the Diviſions form'd by the Inſertion of the Filaments: this Plant belongs to the twelfth Claſs, the name of which is Icoſandria. This might ſeem to mean, that the Flower had juſt twenty Filaments, but the Account is not the Article of Diſtinction: Icoſandria is an adopted Term, and the Character of the Claſs is not compris'd in leſs than theſe three Marks: the Flower has a hollow Cup form'd of one Piece; the Petals or Segments of the Flower, are fixed to the Side of the Cup; and the Filaments, which are numerous, are inſerted either on the Side of the Cup, or to the Flower itſelf; not to the Receptacle or Head of the Stalk whence the Flower riſes, for that is the Character of a diſtinct Claſs, the Polyandria of which we ſhall ſpeak hereafter.

This is one of the moſt complex Diſtinctions of the Linnæan Syſtem, and ſhould be well fixed in the Memory: the preſent Flower is a very proper Inſtance, tho' the great Author of the Syſtem once himſelf miſtook it.

COM-

Meſembryanthemum foliis ſubulatis ſemi-teretibus glabris internodio longioribus. Lin.

COMPLEAT ANEMONE.

ANEMONES are too familiar for Deſcription: and after what has been ſaid relating to the ICOSANDROUS Claſs, there need few Words to explain the Character of the POLYANDRIA, to which this belongs. The Filaments are numerous, as in the Plants of that Diviſion, but they riſe from the Receptacle, or Head of the Stalk; not from the Edges of the Cup, or Body of the Flower.

Science or Hiſtory demand no more on this Head: therefore we have Opportunity under a favourable Inſtance, to trace that great Article, the Progreſſion of Nature, in forming the Doubleneſs of Flowers, in a new Courſe. We have ſeen ſeveral Ways in which that Change is brought about in various Kinds; and this will add one more: for tho' the Method be the ſame in its Original, it differs greatly, as the Effect is wrought from various Parts of Flowers.

In the Tulip, we ſee the Filaments ſpread into Petals, and form the Doubleneſs of the Flower, and from the vaſt Number of Filaments in the Anemone, when ſingle, and the Multitude of new Petals in the double One, it would be natural to ſuppoſe they had alſo the ſame Origin in this: But it is much otherwiſe. We open here into a new Courſe of Nature; and the Doubleneſs of this Flower, and of ſome others of like Kind, is form'd from Parts we have not yet ſeen ſerve that Purpoſe. That this new Courſe of Nature may be the more clearly underſtood, I have given the Flower of the natural wild Anemone, Native of ÆGYPT, and other Parts of the Eaſt, with thoſe ſucceſſive Forms it wears from a different Culture.

The Structure of the common natural, or ſingle Anemone is this.

At the Summit of the Stalk, there is a ſlight fleſhy ſwelling of a paler Colour: this is called the Receptacle of the Flower; and its ſeveral Parts riſe from that Receptacle in the following Order. Firſt, the Body of the Flower, compoſed of ſix Petals in two Series, three outer and three inner, as in the Tulip: the three outer ſerve as a Cup, the three inner being more delicate. Next within theſe, riſe from the ſame Receptacle, a Multitude of Filaments crowned with large yellow Buttons. The Inſertion of theſe on the Receptacle, ſhews the Plant to be of the Polyandrous Claſs; not of the Icoſandrous. Above theſe Filaments, the Receptacle runs up into a conic Form; and is cover'd all the Way with naked Rudiments of Seeds.

When the Flower becomes, by Culture, ſemi-double, the three inner Petals form that Doubleneſs, each ſpliting flatwiſe (as the new Petals of a Tulip) into two, or into three; and thus the Flower, inſtead of ſix, has nine or twelve Petals. But in the compleat double Anemone, the Change is much more wonderful. The outer Petals remain as in the ſemi-double Flower; the Filaments are converted into peculiar oblong Subſtances, acquiring a fine Colour; and every Rudiment of a Seed upon the Surface of the Receptacle, forms an additional Petal. Theſe make the inner Cluſter, and perfect the Doubleneſs of the Flower.

In other Kinds, we may promote Doubleneſs by the Uſe of ſuch Manures as peculiarly ſwell the fleſhy Subſtance of the Stalk whence the Filaments riſe. In this we are to enlarge the Pith or central Subſtance: for from that riſe the Rudiments of Seeds. Such a Manure, and a Length of Time before the Plant is ſuffer'd to flower, will produce this elegant Change.

Anemone foliis radicalibus ternato decompoſitis involucro folioſo. Linnæus.

Compleat Anemone.

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Heroic Piony.

HEROIC PIONY.

THIS elegant Flower, which has ſo much the Aſpect of a Child of Culture, came into my Hands the Produce of abſolutely Savage-nature. GREECE, and ſome Parts of the northern EUROPE, produce that ſimple Male Piony, from which our Gardeners have, in the Courſe of many Ages, rais'd the vaſt double Flower of the ſame Name: but that, with ſome little looſe and caſual Variegation in the Petals, has been their utmoſt Reach. Here we behold it, ſtrip'd like a Carnation and proliferous; one flowering from the Centre of the other: and this from ſimple Nature. Perhaps it is the utmoſt Inſtance that has been, or can be produc'd of her Luxuriance. I have nam'd it Heroic, as it tranſcends common Nature; and reminds us of what is called the heroic Style in Painting.

The Country whence it came was AFRICA; a Quarter of the Globe from whence we have not before receiv'd this Plant: but tho' an AFRICAN, it is not an Inhabitant of the parch'd Sands. Some few Miles up the River SENEGAL there is a large Extent of Graſs-land, like the richeſt of our Meadows: that River rolls its rapid Current through it, and, on the Banks, grow innumerable Pionies, drooping their double and luxuriant Heads toward the Water. This was one of them: the Leaves are in nothing different from the common Piony, nor the Flower, except in Elegance.

We ſee double Flowers in our own Meadows: the Lady-ſmock and the Marſh-marygold are Inſtances. So far EUROPE mimicks the Garden Culture in her Wildneſs; but the Luxuriance of a vaſt proliferous Flower, in abſolute free Nature, demands a warmer Sun; and ſeems to claim a Place as ſingular as that where it was found; an EUROPEAN Meadow under an AFRICAN Heat. Gardeners produce, or more properly Nature, exuberant under their Aſſiſtance, ſends up ſometimes proliferous Anemones, Ranunculus's, Roſes, and ſome other Kinds: but even our extream Art has never ſhewn a Flower of this enormous Size, ſo well fed, that another could riſe from its Centre.

Proliferous Flowers, in general, have been ſuppos'd to ariſe from a Continuation of the Style of one into another Flower: it is the Doctrine of the LINNÆAN School; but it is not univerſal in the School of Nature. The Ranunculus is render'd proliferous by a Continuation of the Receptacle into a Stalk, or more properly by the Stalk aſſuming the Place of a Receptacle of Seeds, and puſhing itſelf farther. In this, if the Encreaſe depended on the Stigmata, for there is no Style, there muſt two of theſe Secondary Flowers have riſen from the Centre of the Firſt, for the Piony has two Rudiments of Capſules. But there was Nothing of it in the preſent Inſtance.

The Summit of the natural Stalk form'd a proper Receptacle, as is uſual in this Flower; but inſtead of a double Rudiment of a Seed-veſſel riſing from the Head of this, the Receptacle became ſimply extended in Length, the Petals occupy'd ſo much of it as is uſual, and that which grew out farther, was cover'd with the ſame green Rind as the proper Stalk; and was to all Intents and Purpoſes a real Stalk, ſupporting on its Head another Flower.

The claſſical Character of the Piony cannot be read in the double Flower: but in the Single, a Multitude of Filaments growing from a Receptacle, not from a Cup or Petal, ſhew it one of the Polyandria.

BOHEA TEA.

WE have long queſtion'd whether the Green and Bohea Tea were, or were not the Produce of the ſame Shrub: moſt thought they were; their Difference being attributed only to the State of Growth wherein the Leaves were gather'd; and the various Method of curing them. I think it is otherwiſe. Certainly I have received among my CHINA Plants, two Specimens under the Name of Tea, which differ obviouſly in Leaf and Flower. That which I figure here, has ſhorter and darker Leaves, and in each Flower ſix Petals: this, from the Colour of the Leaf, I fancy to be the Bohea. The other has longer and paler Leaves, and in every Flower nine Petals; that I ſuppoſe to be the Green. Whether this be the Caſe, muſt be found by more Experience: and if they really be the Produce of two diſtinct Shrubs, we are yet to learn whether the Difference be as Species, or only as Varieties. One Thing, beſide the Difference of Form and Colour of the Leaf, ſeem'd, in the Courſe of theſe Experiments, to ſhew that they were really the two Kinds I have conjectur'd. The Water in which this Specimen was macerated, had the Colour and the Taſte of genuine Bohea Tea; and that which was us'd for the other, had as palpably the proper Aſpect of Green Tea; only made very ſtrong; and perhaps, colour'd a little from the Bark.

Beſide, the greater Diſtinctions, there was ſomething in the Colour of the Antheræ or Buttons. They were Orange-colour'd in the One, and of a pale Yellow in the other. I ſpeak of ſuch as were burſt, for there were ſome unripe ones which were white.

The Claſs to which this and the other belong, is very evident. They have a vaſt Multitude of Filaments, and theſe riſe from the Receptacle: therefore the Shrub is of the Polyandrous Tribe.

The Cup is ſmall; the Filaments are innumerable: the Seed-veſſel, when perfect, conſiſts of three Parts, in each of which is a ſingle Seed. We have lamented often, that the Seeds do not come over perfect, and ſound enough to grow when planted here, as many other of the CHINA Seeds freely enough do; and it has been ſuppos'd, the People of that Country, who are celebrated for their Cunning, took ſome Meaſures to prevent this before they ſuffer'd the Seeds to be exported. But it is all eaſily reſolv'd into the common State of Nature.

Many Seeds, with us, will not grow, if they be not ſown ſoon after Ripeneſs: even the Acorn, which one would think, at firſt Sight, durable; looſes its Power of Vegetation in a very moderate Time. The Fact is this: thoſe Seeds which are moſt ſubject to a Fermentation in their own Subſtance, ſooneſt looſe the Power of Growth; and this is one of them.

Perhaps a better Method of preſerving the Seeds may anſwer the Purpoſe; and if that can be done, I believe it will be now effected. A Nobleman, whoſe Regard to Botany I have had frequent Cauſe to mention in this Work, has contriv'd a Method, which will, I think, ſucceed.

GREEN

Thea. Linnæus.

Bohea Tea

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Green Tea.

GREEN TEA.

IF there were no Value in this Shrub, as Tea, its Beauty is ſufficient to recommend it to our Notice; and I am in no doubt, but a few Years more will add it to our Collections. We admire the double bloſſom'd Cherry, and ſome other Trees, whoſe Flowers reſemble thoſe which cover the Green-Tea Shrub, but they are inferior to theſe: no Whiteneſs can excel that which we ſee in them; and their Diſpoſition in little Tufts and elegant looſe Cluſters upon the Summits of the tendereſt Branches, give the whole Plant a ſingular Beauty.

Why I have call'd this the Green Tea, has been ſaid in the preceding Chapter: perhaps it is an Error, but there is Appearance of Truth on its Side. Certainly it is Tea; and the Aſpect differs from that of the more duſky Plant preceding. LINNÆUS, ſaw in various Parcels of Tea, Flowers with ſix, and others with nine Petals; and queſtions whether they belong'd to the ſame Species, or to two diſtinct ones. Theſe Specimens ſhewed the ſame Variety of Flowers, and ſhewed them growing on Boughs, whoſe Leaves were alſo different: the Eye here ſeems to have anſwer'd that Queſtion and the Taſte confirm'd its Judgment, yet more Proof is wanted; for he were very raſh who ſhould found an abſolute Diſtinction upon one Specimen.

'Tis certain the CHINESE gather the Bohea and the Green Tea at different Periods of Growth: and they have many other Particularities relating to an Article of ſuch Importance. But tho' the Accounts of theſe led EUROPEANS to believe the ſame Shrub produc'd both; they did not fairly induce that Opinion. It may be true, that Bohea Tea is gather'd at one Period of Growth; and Green Tea at another: and yet it may be true alſo, that they are ſeparate Shrubs which produce them. The Time of gathering would make ſome Difference if they were the Leaves of the ſame Species; but this does not prove that they are ſo: nor has any Writer of ſufficient Accuracy for the Obſervation ſaid it.

The Flowers have not at all the Taſte or Flavour of the Leaf. They are harſh, rough, and very pleaſant: the Buds, before they open, have indeed a high and very fine Flavour, like that of the fineſt Green Tea, but more delicate.

We are not to wonder, that the Seeds brought over into EUROPE do not grow; for it is an Obſervation of the honeſt KAMPFER, who had ſeen the Culture of the Shrub in Japan, that even there, not above two in ten ſucceeded when they were ſown for raiſing the Plant for Uſe. He attributes this to an oily Matter in them, which grows quickly rancid. How philoſophical this Solution may be, I ſhall not take upon me to determine; but Doubtleſs it is owing to ſome Change wrought in the Subſtance of the Seed itſelf, that it is ſo apt to fail. If any Thing can prevent this, and preſerve it during ſo long a Voyage, probably it will be now found.

FRA-

Thea. Linnæus.

FRAGRANT HIBISCUS.

THIS robuſt Plant has every Thing except Colour to recommend it to the Notice of thoſe who value the Exotic Botany: but Nature, to make amends for what ſhe has with-held in that Reſpect, has given it Fragrance; an Article of Value deny'd to all the others. This is not in its Flower, or at beſt, it is but faintly perceiv'd there; but is perfect in the Seeds: they have the Sweetneſs of Muſk without that Faintneſs, which attends the animal Perfume. This was ſeldom perceiv'd more delicately than in the Seeds which accompany'd the Specimen from which this Figure is taken: and they preſerv'd their vegetative Power as ſtrongly as their Scent; for ſcarce any of them fail'd. They have added a Multitude of the Plants to our Collections.

All that could well be given a Plant in Form, Nature has beſtow'd on this: the whole Out-line of the Figure is in the common Growth of the Plant, great and graceful; the Parts are all great, and the Aſpect is at once wild and noble. The Form of the Leaf, pentangular in the upper Part, and toward the Ground heptangular, rough, ſerrated, and with irregular Points, is much above any of the four elegant flower'd Kinds which follow; and tho' the Bloom has only a pale Yellow for its Colour, except the ſmall Variation in the Eye, the Diſpoſition of the Petals makes great amends, for ſcarce any Kind has them ſo beautifully waved.

It has the double Cup of all the Hibiſci: the outer one has eight Leaves, and the inner one is entire at the Baſe, but divided upwards into five Segments. The Plant is a Yard high, and from theſe Cups burſt out, at leaſt, as many Flowers as there are Leaves, in a continu'd long Succeſſion.

The Filaments appear in a peculiar Form, and conſtitute the Character of Claſs; which we have not before had Occaſion to name, and which will be ſeen yet more diſtinctly in the following Plant. Their Number has no Place in this peculiar Character, it is their Arrangement. They are united in their Baſes, ſo as to form one regular Column, or tubular Body, thro' the Hollow of which, runs a Style, whoſe five Heads, or Stigmata, ſhew themſelves beyond the Extremity of the Tube. The whole under Part of the Filaments, indeed, in a Manner, their whole Bodies are thus united into one uniform Subſtance; but their extream Points are looſe, and ſeem ſo many ſhort Filaments themſelves, riſing from the Head of the Tube, and ſupporting their Antheræ. This Union of the Filaments conſtitutes the Character of the Claſs. As they form only one Body, the Term is Monadelphia. The common Mallow, and all its Kind, have the ſame Conformation, and are of the ſame Claſs. We ſhall illuſtrate this in ſome ſucceeding Inſtances; and ſhall afterwards have Opportunity to ſhew what are thoſe Claſſes whoſe Conſtitution depends upon this Kind of Union in the Filaments, but where they form more than one Body.

This Plant is a Native of the EAST and WEST INDIES, of the BRASILS, and of SURINAM, and is well known in EGYPT: it is a wild Plant alſo in CHINA, whence this came.

Hibiſcus foliis ſub-peltato-cordatis ſeptemangularibus ſerratis hiſpidis. Linnæus.

Abelmoſch Authorum.

Musk Hibiscus.

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Crimson Hibiscus.

CRIMSON HIBISCUS.

WE are ſtill within the Limits of the Monadelphous Claſs; and we have here a Plant, which, beſide its peculiar Beauty, has the accidental Merit of ſhewing the Character of that Claſs very diſtinctly. The Column into which the Filaments unite in all the Monadelphous Plants is in ſome ſhort, and bury'd in the Flower: in that Caſe only, the ſearching Eye of the Botaniſt diſcovers it. Here it runs out a vaſt Length from the Petals; and he muſt have no Eye, nor no Attention, who does not look on it as ſomething ſingular. The Ends of the Filaments are looſe in this as in the other; but their whole Length beſide, forms together this long and ſlender Column.

The CHINESE have four Plants of the Hibiſcus Kind, which they cultivate in their Gardens; and to which we give the very improper Name of CHINA ROSES. Two are ſingle, and two double. I was ſo happy to receive Specimens of them all; and they follow here: this being the firſt of them. They are diſtinguiſhed by their Leaves, and tho' call'd four, they are properly no more than two Species, and their two Varieties from Culture: this, and its double State, are diſtinguiſh'd by having ſimple Leaves; the other two, by their being palmated, or broad like a Hand and divided, tho' not deeply, in the Manner of Fingers. We have begun to get them into our Collections, and probably the Seeds of theſe will add to the Number: there are ſeveral robuſt Plants of the palmated Kind at Mr. LEE's, rais'd from the Seed that came over with theſe Specimens, and it is probable ſome are the ſingle, ſome the double Kind.

This Shrub is twelve Feet high, and naturally luxuriant in Branches; the Leaves are of a very delicate Green, and their Shape is not unhandſome. The Flowers are vaſt, and in their Colour baffle the faint Tincts of Art; it is a full and very perfect Crimſon, and as the Light plays variouſly upon it, the fine Tinct gives a thouſand elegant Shades. This Account came with the Specimen, and he who wrote it, cannot be ſuſpected of Want either of Accuracy or Truth: we ſhould have been happy if his Obſervations had extended farther.

This is a Hedge-ſhrub in CHINA; and they admit it ſometimes into the wild Parts of their Gardens, but it is in the following State they plant it in the moſt conſpicuous Places. The Seaſon of flowering returns twice in the Year, when wild; the Beginning of Summer and late in Autumn: but by their eaſy Management of it in Gardens, taking off the Flowers, without ſuffering any to remain for Seed, they keep it in full Bloom all the Summer. The Colour of the Flower upon the dry'd Specimen, confirms the Account of its Luſtre when freſh; and perhaps the double Kind, tho' full of Beauty in its Way, is hardly ſuperior to it.

The Seeds which came with this have not yet ſhown their Shoot, tho' ſown with the others.

DOU-

Hibiſcus foliis ovatis acuminatis ſerratis glabris caule Arbareo. Linnæus.

Single China Roſe. —— Vulgo.

DOUBLE CRIMSON HIBISCUS.

THIS elegant Shrub owes its Beauty, as well as Singularity, to the Form and Fullneſs of the Bloom; for Nature has retrench'd ſomething from the high Crimſon which the Flower ſhews in its ſingle State. This is a Produce of the Gardener's Art from the preceding Plant; and, as in ſome other Inſtances, the CHINESE Gardeners tell us, they can bring on the Change at Pleaſure: but till they name the Means, we have a Right to doubt.

The Shrub which yields theſe double Flowers, is ſcarce of half the Heighth of that which has them ſingle. It forms a thicker Head, and the weak Branches are thus ſupported in a Length, they would not otherwiſe bear. It flowers all the Year, for no Seed ripens on it: and they are careful to preſerve the Strength of the Plant, by adding Manure to the Earth about its Roots, and frequently croping the Flowers, and the extream Branches.

The Specimen I received, came ſo perfect, that I had an eaſy and very favourable Opportunity of tracing the Courſe of Nature in doubling the Flower: this was an Article of the more Curioſity, becauſe the Monadelphous Tribe have the Parts on which Doubleneſs depends, arrang'd in a peculiar Manner.

On comparing together the ſingle and the double Flower, I could perceive that the five outer Petals of the Double were the ſame with thoſe of which the ſingle Flower was compoſed entirely; only they are, in this, ſmaller and more curl'd. On laying open the double Flower, its whole Length, I could perceive that the Tube or Column, which ſtands naked in the Centre of the ſingle Flower, was continu'd along the Middle of this, tho' in a very unequal Manner, and bury'd by the Exuberant new Petals.

The Conſtruction of the double Flower in this, was therefore inſtituted by Nature on the ſame Principle, and from the ſame Parts with that of the Tulip, Colchicum, and Glorioſa; namely, from the Filaments only: as thoſe Filaments were in theſe Plants looſe; the new Petals took their Origination from the Baſe of the Flower; but in this Species, thoſe Parts being united into a long Tube, the additional Petals roſe from the Surface of that Tube at different Heights.

This explains the peculiar Shape of the Flower of this Hibiſcus, which is not as the Generality of others round; but conic, oblong, and growing ſmaller to the Top from a broad Baſe. The extream Length of the tubular Congeries of Filaments in the ſingle Flower, occaſions this; for it is the very Body of that Tube which breaks off into Petals and fills up the Flower. The largeſt of theſe are thoſe neareſt the Baſe, and they are the moſt perfect: the others, as they riſe higher, are ſmaller, and they are more wav'd and curl'd. The Antheræ were quite obliterated in the new Petals of this Flower, for the Doubleneſs was perfect; but in the double Hibiſcus following, I could perceive ſome Remains of them.

This Shrub agrees with the Roſeate Nyctanthes, in being ſmaller than that which bears the ſingle Flower; confirming that Syſtem.

M U-

Double China Roſe. Vulgo.

Double Crimson Hibiscus.

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Mutable Hibiscus.

MUTABLE HIBISCUS.

THE Monadelphia abound in Beauty as the Hexandria do, and they are Claſſes worthy of a particular Regard from all who ſtudy vegetable Nature. This Plant, and the ſucceeding double One, its Offspring, would be ſufficient Proof of it, had not the preceding Three laid in their Claim beſide. The Leaf, the Flower, the general Growth in this Species are all elegant; and there is, beſide, a Variety in the Colouring of the Bloom according to its Age, which has a moſt romantick, as well as ſingular Appearance. We ſee in EUROPEAN Plants, Flowers differently colour'd, though the Species be the ſame: thus we have blue Campanulas and white ones, and a vaſt Variety beſide: we alſo ſee in ſome of our Garden Plants, a Change of Colour on the ſame Stem, but this is ſlight in Compariſon of the peculiar and ſtriking Variation ſeen in the Flowers of this Hibiſcus: they vary every Hour as they ſtand upon the Shrub; and the name Mutable was given it for this Reaſon.

At the firſt opening they are very pale; the Tinct is Crimſon, but it is ſo watery in that State of the Flower, that it amounts, at the utmoſt, to nothing more than what we call a Fleſh-colour: it is that Sort of Bluſh we ſee upon ſome of the naturally white Hyacinths, and on the Bloſſoms of the double Bramble. When it has ſtood to be fully open, it glows with a ſtronger Tinct; from this Time it becomes more and more red, till it approaches to Decay; and then there is ſeen it in a Colour deeper than ever, but leſs elegant.

'Tis common to ſee a Shrub, of twelve Feet high, ſpread out into a Head of near as much Diameter, and cover'd in a Manner with theſe vaſt Flowers, as thick and frequent as the Leaves; ſome almoſt white, and others in all the Degrees of Colouring, from the lighteſt Bluſh, to that obſcure Crimſon in which they fade and periſh.

The whole Shrub is beautiful, the Leaves are large and of a downy Softneſs like Velvet: the extream Branches have the ſame ſoft covering; and the innumerable Buds, on theſe, appear a great Article of its Beauty: they have the double Cup, as all the Hibiſci, and they have this ting'd variouſly with Brown, or Red mix'd with a delicate Green.

The Characters of this Flower are the ſame as in the preceding, and they are expreſs'd with ſufficient Plainneſs. The numerous Buttons hang upon very ſhort, looſe Ends of Filaments, whoſe Bodies grow together, into a Tube or Column, thicker and ſhorter than in the ſingle Kind laſt nam'd, but pierc'd in the ſame Manner by a Style, whoſe five Heads are no ill Grace in the ſingle Flower. It ſhews the Claſs to be the Monadelphia.

This is a Weed in CHINA. It grows in waſte Grounds, and over-runs whole Acres. They admit it ſometimes into the remote and wild Parts of their Gardens: but 'tis the following State of it, which they admire and cultivate.

DOU-

Hibiſcus foliis cordato-quinquangularibus, obſolete ſerratis, caule arboro. Linn.
Palmated China Roſe. Vulgo.

DOUBLE MUTABLE HIBISCUS.

THIS is the Shrub the CHINESE value, at that extream Rate we are told; and is, what was firſt and originally called, by our People, the CHINA ROSE, tho' the double Crimſon was firſt ſeen in EUROPE.

The CHINESE plant it every where before their Doors, and about their Pavillions; they raiſe it in Pots of their own Porcelain, and nurſe it as our Floriſts do their Auriculas and Carnations. They give its Figure upon all their ornamental Works, Paper, Varniſh, and their peculiar Ware. Every Place, and every Thing is full of it among them.

Thoſe who ſaw the ſmall Sprig which came over to me, loaded with three Flowers and as many Buds, varied with ſuch a wonderful Elegance of Colouring, could not wonder at the Eſtimation wherein theſe People hold it. 'Tis certain, we have Nothing that comes near it. The Shape, the Colour, and the Diſpoſition of the Flower, exceed whatever we are able to raiſe of any Kind: and additionally to this, it is larger than almoſt any other Flower. It covers the whole Shrub which produces it for many Months in a wonderful Profuſion; and it has all the Change of Colour juſt nam'd in the ſingle Kind.

The Shrub is ſmaller than in that Plant, but yet is of ſufficient Stature: Nature ſeems to have been careful when ſhe beſtowed ſuch Elegance upon the Flowers, not to have rais'd them above the Level of the Eyes which ſhould behold them.

Having the ſame happy Opportunity of examining together the ſingle and double Flower in this, as in the preceding Species, it was not difficult for me to diſcover the Courſe wherein Nature had proceeded to form the additional Petals. It was the ſame exactly, as in that. The Body of the Column loſt itſelf in the double Flower in the Baſes of a vaſt Multiplicity of Petals: but as that Part in the ſingle Bloom of this Species is not long as in the other, the Flower, when double, does not acquire any Thing of that Form; but is as Roſes, and other of the large double Flowers nearly globular.

When the Bud burſts, to let this vaſt Flower forth, the firſt Appearance ſhews it nearly white: 'tis greeniſh toward the Bottom, that is, the Edges of the ſeveral Diviſions are ting'd a little with that Colour, which ſhews as ſingular and beautiful in them, as we ſometimes ſee it in the fine Anemones. The Body of the Flower reſembles a white and very thin Silk, gloſſy and wonderfully delicate; and the extream Part, form'd of the Edges of the Petals, has a Line of a Straw's Bread, or ſomewhat more of Crimſon.

As the Flower opens, this Colour ſpreads down the ſeveral Petals, and becomes ſtronger, ſo that a moderately open'd Flower, is white and red, mix'd in an equal Quantity, and forming a moſt pleaſing Variety.

From this Time, the Red ſpreads farther, and becomes more glowing; till in the laſt Stage of all, which borders on Decay, the whole Body of the Flower is Crimſon.

As the Shrub is cover'd thick with Flowers, and ſhews them at once in all theſe Varieties of Colouring, and in a thouſand Gradations between, all elegant, there cannot be conceiv'd in vegetable Nature, a Sight more pleaſing, or more wonderful.

Double palmated China Roſe. Vulgo.

Double mutable Hibiscus.

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Blood-staind Hypericum.

BLOOD STAIN'D HYPERICUM.

THE Lord NORTHUMBERLAND, born to improve as well as patronize the Science, added this elegant Plant to the EUROPEAN Botany. This Nobleman firſt rais'd it here from Seeds obtain'd from CHINA, a very few Years ſince; and from his Store, all the curious Gardens now are ſtocked with it. Tho' a Native of the EAST, it bears the open Air with us, and flowers all Summer: our Winters are too ſharp for its longer Continuance in that State, but in any Part of EUROPE, a few Degrees more South, it will doubtleſs live and flower all the Year. With us only the Superficies dies in Winter; the Root remains, and ſends up a new Shrub early the following Spring.

'Tis a Yard high: firm in the Stem, and variouſly branch'd: it forms a fine wild Shrub for Clumps in Gardens, and its Flowers have an uncommon Beauty; both in the Bud, and when full blown.

The Buds are very large, and tho' their general Colour is yellow, they are always ſtain'd in irregular Streaks and oblong Blotches, with an abſolute Blood-red.

When the Flower opens, the whole inner Surface is a fine Yellow; but behind, this ſtaining of the Bud preſerves itſelf in all its Luſtre: and as the Flowers droop or bend accidentally, or as the Winds move them, theſe Crimſon Stains are ſeen upon the Back, and make a fine Variety.

The Stem is cover'd with a brown, rough Bark, and often from its Ridges has a ſquare Aſpect: the Leaves are firm, and tho' there be ſome Stiffneſs in the Manner of their Growth, it is ſingular, and upon the Whole not unpleaſing. They are not pierc'd with thoſe ſmall Holes which we ſee in the Leaves of common Hypericum, when held up to the Light.

The Filaments are numerous in this Flower, but they are collected by Nature into five ſeparate Cluſters: this ſhews the Claſs to which the Plant belongs, the POLYADELPHIA. The Number of theſe Arrangements, into which the Filaments are join'd, is not eſſential, only it muſt be more than two. This Diſpoſition of the Filaments is not eaſily ſeen in the entire Flower, becauſe thoſe of each Arrangement cohere only at their Baſes; but if they be pull'd out of the Flower, they come away always in theſe five Cluſters; and the Baſe of each Cluſter is ſomething more than an Union of ſo many Filaments; it is a ſolid, oblong, fleſhy Subſtance, from which they take their Riſe.

Nature has been very ſparing of the Polyadelphous Plants; beſides the Hypericums and Aſcyrums, we know only the Cocoa and the Orange Kind.

Among the Hypericums, ſome have five Styles, ſome three, and others two. This has been ſuppoſed to have only one: but the Summit of that one is plainly divided into five; and the Body of the Style is form'd of the Continuations of theſe five diſtinct Parts; only cover'd by one ſlight Membrane, and terminating in five Cells in the Seed-veſſel.

L E-

It is diſcover'd, ſince Linnæus publiſh'd his Species, therefore it has not yet been nam'd, except by Gardeners. It may be call'd HYPERICUM PENTAGYNUM STYLIS INVOLUTIS.

LEPIA.

I Have the good Fortune here to add a new Genius to the preſent Stores of Botany: and Men will wonder that I have not follow'd the Cuſtom of the modern Writers, and nam'd it from my Patron; or from ſome Friend who could return the Compliment. But in this, I think, the Antients were more wiſe. A Name is uſeful when it conveys ſome Idea of the Plant: I have therefore call'd this LEPIA. The Scales of the Cup are its moſt obvious Diſtinction from all others; and that Word expreſſes it. I have comply'd ſo far with Cuſtom, as to deduce it from the GREEK; but in the common Practice of naming Plants from Men, the Folly is extream, and the Flattery fulſome. All laugh to hear a Tulip call'd the King of PRUSSIA, or an Auricula Prince FERDINAND. Why is the Ridicule leſs to name other Plants Mitchella, or Milleria; Cateſbæa, or Collinſonia? The Botaniſt that can't preſerve his Name by better Marks, does not deſerve that it ſhould be remember'd.

Singularity is the beſt Claim this Plant has to our Regard; for it cannot boaſt much Beauty. A Specimen of it came with my other CHINA Plants and Seeds, but the preſent Figure is taken from a Plant produc'd from thoſe Seeds in ENGLAND. Mr. LEE, of HAMMERSMITH, a very excellent Gardener, rais'd it.

The Height is near three Feet; the Aſpect of the Plant, rough and inelegant. The Stalk is firm, and the Leaves are hard. The Flowers are very numerous and conſiderably large, and they are very laſting. In this Plant the firſt Flower attain'd a Perfection, none of the Reſt reach'd; and remain'd on the Plant ſeveral Weeks.

The radiated Syngeneſious Plants, to which this belongs, are different from all others. Each Flower conſiſts of many tubular Floſucles, or little Flowers in the diſk, and many flat ones at the Verge making the Rays; but the Character of the Claſs is taken from a leſſer Mark. The Filaments in each little Flower are five, and their Buttons unite into one Body. In ſome they ſtand out far beyond the Flower; in this they are leſs conſpicuous.

In the midſt of theſe five Filaments is a Style, divided into two Parts at the Top, and in the Boſom of each Ray is alſo a Style; but there are no Filaments.

The Flower of the Lepia is conſtructed thus: the Cup is long and hard, and is compos'd of broad hollow Scales; each ſwelling forwards, and crowned with a rounded Rim of a dry and more delicate Subſtance. The Rays are female Floſcules: each riſes from the Head of a Seed; it has in its Boſom a Style, and is divided by three Dents at the End. The tubular Floſcules riſe in a conic Head which is form'd of young Seeds, cover'd with light Films and crown'd each with two Thorns: in the Hollow, between theſe reſts the Rudiment of the Style. Theſe Parts I have figur'd ſeparately; together with a Section of the principal Flower, to ſhew the conic Receptacle; and of an imperfect Flower exhibiting the Difference of the Cup. The tubular Floſcule entire is alſo ſhewn fix'd at the Head of the Seed, diveſted of its ſhelly Coat.

The Plant has been thought a Bidens, but the ſcaly Cup and conic Receptacle, ſhew their Miſtake who held that Opinion. It is diſtinct from all others: but Errors in this Claſs are more pardonable than in any other, for it is the moſt obſcure of all.

A M-

Linnæus could give this no Name, for it never flower'd in Europe till the preſent Summer.

Lepia.

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Ambrosial Aster.

AMBROSIAL ASTER.

THIS ſpecious After has been ſome Time familiar with us ſingle; but I have not ſeen it double till the preſent Year. In any State it is a ſingular and very elegant Plant: but the Double exceeds the common State of the Flower in this, as much as in the Famous, and now common CHINA After. The Stem is robuſt and a Yard high; the Branches are innumerable; and the ſmall curl'd Leaves run up into the Cup. As the Progreſſion from the ſingle to the perfectly double Flower has been this Year compleated under my Eye, I ſhall take this Opportunity of explaining the Manner wherein the Flowers of Syngeneſious Plants are doubled: for it is altogether different from the Courſe wherein Nature purſues the ſame Purpoſe in the other Genera. The Flowers are very laſting, whence I have nam'd the Plant Ambroſial, immortal.

The radiated Syngeneſious Flowers we ſee are complex: each is form'd of many leſſer Flowers or Floſucles, and theſe are of two Kinds; thoſe tubular and ſhort which form the Diſk of the general Flower, and thoſe long and flat which make the Rim. In this Inſtance they differ alſo in Colour, thoſe of Diſk being yellow, and thoſe of the Rim Purple: theſe ſeveral Floſcules have been ſuppoſed perfectly diſtinct; but we ſhall ſee they are ſo nearly ally'd, that Nature, in a State of Luxuriance, converts eaſily the one into the other. In this Plant the tubular Floſcules are thus form'd. Each is made of one yellow Petal fix'd upon the Rudiment of a Seed and cut at the Summit into five ſmall Segments. The Rays riſe in the ſame Manner, each from the Head of a Seed, and theſe have alſo a tubular yellow Baſe, tho it has not been regarded; which, inſtead of dividing at the Top, into five Segments, opens, becomes lengthen'd, and changes Colour; ſo that it is continu'd into a Ray or flat Petal; whoſe Baſe is hollow. In this Floſcule is a Style, as in the others; but there are no Filaments.

The Courſe by which Nature forms a double Flower in this Plant, is by giving more Growth to the tubular Floſcules, and thus they are converted into Rays. I have expreſs'd in ſeparate Figures, all the Gradation. The tubulated yellow Baſe is the ſame in theſe Floſcules, and in the Rays; and the Change is thus brought on. Firſt, one of the five Segments, of a yellow tubular Floſcule, grows longer than the others: in the next Stage, it joins the two which are next it, to its own Body; and growing yet longer, there is one long Segment, and two ſhort ones: the long one alſo begins toward its Top to aſſume the purple Colour of a Ray: the next Stage obliterates the two Segments which were left in the former; and the Floſcule is now tubular at the Baſe, with a plain, long, and partly flat Body. One Stage more perfects the Doubleneſs: for this flat Part growing more in Length, and acquiring a full purple Colour, becomes a perfect Ray. The Filaments in this Caſe, fade for Want of Nouriſhment, but the Style remains; and theſe Rays of the Centre become the ſame entirely with thoſe of the Verge.

Thus is the Flower of the After doubled: but as there yet remain uſually ſome perfect tubular Floſcules in the Middle, tho' they are hid by theſe numerous Rays, part of which fall over them; the double Flower itſelf can therefore ripen Seeds. This is not peculiar to the preſent Plant, the double CHINA After is form'd in the ſame Manner, and alſo ripens Seeds.

TRANS-

After caule corymboſo, foliis lanceolatis, reflexis, floribus ſolitariis, calycibus patulis. Linn.

TRANSCENDANT EPIDENDRUM.

ALL Things conſpire, which can be valuable in a Plant, to recommend this to our Regard, and eſtabliſh its juſt Title to the name Tranſcendant. We admire ſome for Colour, others for Smell; ſome for the pleaſing Wildneſs of their Growth, and many for their vaſt and numerous Flowers: this has all. Its Height is determin'd only by that of the Tree on which it climbs; for like our Ivy, it takes hold of every Thing, winding its tough Stalk round the Trunk, and ſcattering its Diviſions among the Branches. The Plant from whence the Specimen was taken, cover'd a Tree equal to our talleſt Elms, and many hundred Flowers were open upon it together.

The Leaves are not without their Beauty, for they play in many Undulations, and have a fine Colour: the Flowers are as ſingular as any Thing in Nature. The CHINESE, from their Figure, give the Plant a Name which ſignifies the Scorpion Flower; for they ſuppoſe a Reſemblance of a Head, a Body, and four Legs: and they are ſo indifferent Naturaliſts, they never think of the Abſurdity of a four leg'd Scorpion.

The Colour of the Flower is yellow in the Ground, and they are clouded and ſpotted variouſly with a fine deep Crimſon. The Petals turn back at the Sides and Ends; otherwiſe the Body of the Flower would be much fuller, and would appear larger. They have the Fragrance of the animal Perfumes: the Scent is ſuch as an artful Perſon might produce from a Mixture of Muſk and Civet, where neither was predominant, nor the Whole ſo ſtrong as to be offenſive.

The Flower has no Cup: it is plac'd naked upon the Rudiment of the Fruit; which is long and lightly furrow'd. The Body of the Flower is compos'd of five diſtinct and wide explanded Petals. In the Centre, where Filaments, and a Style might be expected, is plac'd a ſingular Body, a Nectarium, form'd of four Pieces. Three of theſe are flat, the fourth, or uppermoſt, is thick and hollow; and theſe all unite at their Baſes in a tubular Body, which takes its Origin from the very Head of the young Fruit. Within the hollow Part of the Nectarium riſes the Style, and upon that are fix'd the Antheræ. They are two, and they have very ſhort Filaments. The Fruit which follows, is a long fleſhy Pod like the common Vanilla.

The Characters of a Claſs, different from all thoſe we have before nam'd, appear in this Flower: it is that of the Gynandria which have their Name from the peculiar Situation of the male Parts upon the Female; the Buttons growing upon the Style.

'Tis ſingular that the fine Scent of this Flower reſides in the Nectarium, and the Petal to which that principally adheres; which is that ſuppoſed to repreſent the Body of the Scorpion. It is ſtrongeſt when the Flower juſt opens, and grows weaker from that Time, but the Profuſion of Bloom makes this leſs regarded on the Plant.

GOL-

Epidendrum caule adſcenedente tereti ſubramoſo foliis lanceolatis petalis linearibus obtuſis. Linn.
The Scorpion Flower.

Transcendent Epidendrum.

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Golden Momordica.

GOLDEN MOMORDICA.

THIS is another of thoſe climbing Plants of the CHINESE, which in their native Wildneſs cover Trees. The Fruit in this is the moſt ſtriking Part; large irregularly, rais'd in Tubercles; and of a golden Yellow. This is its firſt State, and in this 'tis very beautiful; but when it burſts with extream Ripeneſs, and ſhews the inner Coat, there is a new Scene of Wonder: the Crimſon upon that is much more ſtriking than the rich Colour of the natural Outſide; and the Variety the white Seeds form, adds to the general Beauty: they ſeem ſo many Crimſon Lumps under the Skin, while they are cover'd by it, as they are in a very peculiar Way originally: but when that burſts, and lets them out, they are white.

The Plant is weak and always gets Support; but like the preceding, when it has once faſten'd on a Tree, it climbs to the full height of it; and covers all its Branches. The extream Ends of the Stalk, after this, hang down partly by their own Weakneſs, and partly by the Weight of the Fruit: and as this is produc'd in vaſt Profuſion, the Wind blowing the Branches one againſt another, ſtrikes theſe together in a wild and very whimſical Manner. Nature, perhaps, ordain'd this to favour the Burſting of the Fruit for the Sake of the Seeds being diſcharg'd; for this is ſo firm in their Subſtance, that it would be a great while before they open'd otherwiſe.

The Flowers, which cover this Plant in great Profuſion, are of two Kinds; and they lead us to another Claſs in the ſexual Syſtem. They might appear all alike to an incurious Eye, but when their inner Part is examin'd, we find in ſome the male Organs of Fructification only; and in others only the Female: 'tis thus in Melons, and a Multitude of other Plants; and as in thoſe Kinds, ſo in the preſent, the firſt mention'd, or male Flowers fall off without any farther Uſe, the Female only being ſucceeded by Fruit.

The Male and Female Flowers have equally a ſmall Cup cut into five Segments; and one of them, as well as the other, has five Petals, which grow to, or riſe from this Cup. In the male Flower the Filaments are three, they are very ſhort, and each ſupports its proper Button: but theſe are not alike; for two of them are ſplit at the End and have an Appendage on each Side, but the Third has only one of theſe Appendages.

In the female Flower there are the Rudiments of three Filaments, but there are no Buttons upon them. There riſes in the Centre a Column or Style with three Heads, and under the Flower is the Rudiment of a Fruit which afterwards ripens to the Form here figur'd.

In the Generality of Plants, the Filaments and Style are plac'd in the ſame Flower; and in thoſe Caſes the Claſſes are characteris'd from the Number and Inſertion, or Proportion of thoſe Parts. In this and many others they are in ſeparate Flowers; but thoſe being upon the ſame Plant, they are call'd Monœcia: in others yet the male Flowers grow upon diſtinct Plants from the Female, tho' of the ſame Species; as in Hemp, Spinach, and the like; and theſe are call'd therefore Dioecia.

There is not a more ſingular Plant than this, or more worth Culture in the whole Monœcious Claſs.

SPI-

Momordica pomis angulatis tuberculatis, foliis villoſis longitudinaliter palmatis. Linn.

Indian Balſam Apple.

SPIRAL VALLISNERIA.

I Had Occaſion to mention, in the laſt Page, thoſe Vegetables which have the Male and Female Flower, not only diſtinct in themſelves, but placed upon ſeparate Plants. This Valliſneria is an Inſtance; nor is it poſſible for Nature to produce one more wonderful. The Flowers of the two Sexes are not only diſtinct ,but they are unlike to one another; nor is any Thing ſo ſtrange as the Method purſu'd by Nature to bring them together, for the Propagation of the Plant: the male Flowers growing under Water at a great Depth, and upon ſhort Footſtalks; the Female having very long and wonderful ones, and floating on the Surface.

The whole Account, as given by accurate Writers, ſeems yet ſcarce credible; and LINNÆUS laments that he has not ſeen the Flowers. I obtain'd the Specimen from which this Drawing is made from ITATY, by the Favour of Mr. BROMFIELD, the Princes's Surgeon; whoſe Intereſt there procur'd me the perfect Plant and all its Parts.

It takes Root always at the Bottoms of Ditches of three or four Feet deep; and whether the Plant be Male or Female, cannot be known till the Time of flowering: the Root and Leaves being perfectly alike in both. The Root is fibrous, and the Leaves are very long and narrow: their Colour is a freſh Green, and they play about variouſly with the Courſe of the Water.

At the flowering Seaſon, the Male and Female ſhoot up their Stalks together. The male Stem is moſt inconſiderable, 'tis very ſhort, and has a Spike of little Flowers, whitiſh and cut into three Parts, and in the Centre of each of theſe are two ſhort Filaments, crown'd with Buttons.

The female Plant ſends up its Stalk even to the Surface of the Water: and by a peculiar Mechaniſm, always lays the Flower which terminates it, flat upon that Surface; open to the Air. The Mechaniſm is this: the Stalk is twiſted in a ſpiral Form; and while the Flower is but in Bud, the ſeveral Convolutions are apply'd cloſe together; ſo that it is very ſhort. When the Flower is ready to open, the ſpiral Coil unwinds itſelf, and the burſting Bud is laid upon the Surface: there the Sun warms it, and the Flower is open'd perfectly. If the Water be within the Influence of Tides, or by any other Accident is at Times deeper and ſhallower, the ſpiral Form of the Stalk winds or unwinds itſelf juſt as much as is neceſſary to keep the Flower upon the level Top of the Water. This is needful for the Impregnation of the Seeds; which is indeed perform'd in a Manner altogether wonderful.

When the male Flowers are ready to burſt, they ſeparate of themſelves from the Stalk; and being light they riſe to the Surface of the Water: there they float looſe; and there the female Flower lies upon the ſame Level ready to receive the Duſt from their Buttons. As the Winds, or Current throw the male Flowers about, ſome of them get at the Female, and thus the Seed-veſſel which follows that Flower is impregnated.

Nothing in Nature is more ſtrange than this Production of two Kinds of Plants, ſo far as the Flowers are concern'd from the ſame Seed: for the male Valliſneria riſes from the Seed of the female Plant as well as the Female; and ſo it is throughout this Claſs.

CRIM-

Valliſneria. Linn.
Valliſneria et Valliſnerioides Micheli.

Spiral *Vallisneria.*

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Crimson Fig.

CRIMSON FIG.

THE Shape as well as Colour of this Fig is pleaſing: it is a perfect Globe, and when full ripen'd in its native Climate, it glows throughout, upon the Surface, and within with the moſt perfect Crimſon.

It grows to five and twenty Feet in Height, but is a weak and ill ſhap'd Tree; always the better for Support and the more Luxuriant. The Roots are cover'd with a purple Bark, and the ſame Colour; tho' it be loſt upon the Stem, appears upon the young Shoots above the Inſertions of the Footſtalks of the Leaves; and all about the Fruit.

From various Parts of the Trunk, and of the drooping Branches, where they are within the Reach of the moiſt Exhalations of the Ground, there grow out certain Threads, which, by Degrees, lengthening and acquiring more Thickneſs, hang at laſt to the Ground, and pierce it, in the Manner of natural Roots produc'd below the Surface. The World is well acquainted, that there is a Fig-tree, whoſe Branches droop to the Earth, and there take Root again. It is a Property common alſo to our Bramble of the Hedges, and many other Kinds wherein it has paſs'd unregarded: this Way of producing Roots in the open Air, tho' leſs attended to, is really more ſingular.

The Bark of the Trunk is a pale browniſh Grey: The Branches are in a Manner jointed at ſmall Diſtances; and from every Joint riſes a ſingle Leaf ſupported on a thick, firm Footſtalk. The Leaves themſelves are of a handſome Shape, oval, undivided, and obtuſe. They are of a firm Subſtance, and of a deep and ſtrong green Colour, diverſify'd not inelegantly with bright Crimſon Veins. Theſe would alone recommend the Shrub to our Regard, if it never fruited with us, for they are very elegant, and they are ever green.

The Fruit is nearly of the Size of our moſt common Fig, but round; and it grows from the Branches in the ſame Manner, no Flower having preceded.

The Fructification of the Fig has been, till of very late Time, ſo little underſtood, that the Shrub was claſs'd, even by the beſt Writers, along with Ferns and Moſſes among the Cryptogamia. This was a Diſgrace to Botany as a Science: but it is ſince remov'd. The Antients knew, that the wild Fig they call'd Caprificus, was neceſſary to the ripening of Fruit upon the Female; and this, tho' ſlowly, led the modern Botaniſts to underſtand the Courſe of Nature: which is thus.

That which we call the Fruit of the Fig, is properly a fleſhy, juicy Cup, containing many Flowers. Theſe in the common Fig-tree are either Hermaphrodite, or Female; but upon the Caprificus, they are Male: and this Caprificus is the ſame Species; as is the male Valliſneria, only differing in the Production of ſimply male Flowers. This is the Character of the Claſs call'd Polygamia. Without theſe male Flowers, the Seeds of the common Fig will not well ripen: tho' the Fruit, as it is call'd, becomes pulpy, ſoft and eſculent. Young Trees will be rais'd by the Seeds of ſuch as have been impregnated from the male Plant; and not from thoſe of others.

ENOR-

Ficus foliis ovatis integerrimis obtuſis caule inferno radicato. Linn.

Bengal Fig.

ENORMOUS POLYPODY.

A Single Leaf makes but a ſimple Appearance after the gorgeous Cluſters and profuſe Elegancies of Nature, repreſented juſtly, if imperfectly, in the preceding Plates: But in the fern Kinds, to which this belongs, a Leaf is all. It is the whole Plant entire, and capable of Propagation; theſe bear no Stalk for Flowers, but the whole Herb is here. The golden Dots upon the pale Backs of the Leaves are Cluſters of minute Flowers and their ſucceeding Seeds. Theſe are ſo ſmall, and the Progreſs of Nature in performing the great Work of Impregnation, is ſo hid from our Sight by the Minuteneſs of the Organs, that the whole Claſs is thence nam'd Cryptogamia; thoſe which impregnate in Obſcurity. It was proper to give one Plant of this peculiar Claſs; and Fortune could not have thrown in the Way a nobler: for what Beauty there can be in a Leaf this has; and there is alſo a Singularity about the Root, worthy particular Regard. Many of the Ferns, and even of this particular Polypody Kind, have Leaves more complex in their Form, and more divided; but thoſe who have ſtudy'd the Art of Deſign, will give the Prize of Elegance to this whoſe Parts are all large, ſuited to the enormous Whole.

The antient Naturaliſts have nam'd a Creature, call'd the Scythian Lamb, and told us idle Stories of its Life: nay, ſome have brought the Body into ENGLAND; and we have ſeen the Folly and the Falſity of the Accounts by that unerring Evidence. This Lamb is the thick Root of a Fern, cover'd with a brown and downy Coat, and they cut off four of the Stalks at a due Heighth, which paſs upon the credulous for Legs. This Polypody will explain the Miracle; and as it is evidently a Native of CHINA and the neighbouring Countries, tho' we firſt had it only from South AMERICA; it is not improbable the very beſt of thoſe imagin'd Creatures have been made from it.

Near the decaying Stump of ſome old Tree, where the Soil is mellowed by the fallen Leaves of many Seaſons, riſes this ſpecious Polypody. The thick Part of its Root creeps variouſly and wildly upon the Surface of the Ground, tho' under Shelter partly of the Leaves: this is cover'd in a ſurpriſing Manner with a brown ſilky Manner, and from this ſhoot the Fibres. A fertile Imagination might find eaſily the Forms of Bears and Bulls, as well as Lambs in it; as Children ſee ſuch Figures in the Fire, or Aſtronomers in the Heavens. And as Stalks riſe from thence in many Parts, Legs enough may be form'd at Pleaſure.

The Plant riſes to a Yard in Heighth or more; and its long undulated and fair Diviſions, are decorated on the Back with round Cluſters of Seeds of a gold Yellow. This is the Character of Polypodies among the Cryptagamous Claſs; the reſt having the Cluſters in long Lines, or on the Edges of the Leaves, or covering their whole Surface.

Nature ſeems to have conſider'd a beautiful Out-line in the Formation of this Leaf in a peculiar Manner: not only the Diviſions are elegant and plac'd elegantly, but their Proportion and Diſpoſition are vary'd to favour it. The lower Lobes are kept diſtinct, and the terminating Part is larger than the reſt; both theſe Particulars are Sources of Beauty.

Polypodium frondibus pinnatifidis lævibus pinnis oblongis diſtantibus infimis patulis, terminali maxima. Linn.
Golden Polypody.

F I N I S.

Enormous Polypody

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